# 2007 Cadillac SRX Owner Manual


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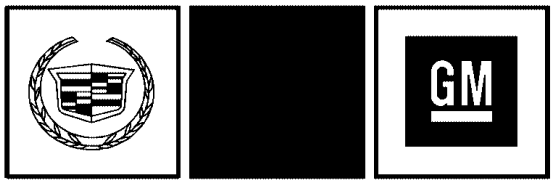

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This manual includes the latest information at the time it was printed. We reserve the right to make changes to the product after that time without notice. For vehicles first sold in Canada, substitute the name “General Motors of Canada Limited” for Cadillac Motor Car Division whenever it appears in this manual.

This manual describes features that may be available in this model, but your vehicle may not have all of them. For example, more than one entertainment system may be offered or your vehicle may have been ordered without a front passenger or rear seats.

Keep this manual in the vehicle, so it will be there if it is needed while you are on the road. If the vehicle is sold, leave this manual in the vehicle.

## Canadian Owners

A French language copy of this manual can be obtained from your dealer or from:

Helm, Incorporated
P.O. Box 07130
Detroit, MI 48207

Litho in U.S.A.
Part No. 15861908 A First Printing

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## How to Use This Manual

Many people read the owner manual from beginning to end when they first receive their new vehicle. If this is done, it can help you learn about the features and controls for the vehicle. Pictures and words work together in the owner manual to explain things.

## Index

A good place to quickly locate information about the vehicle is the Index in the back of the manual. It is an alphabetical list of what is in the manual and the page number where it can be found.

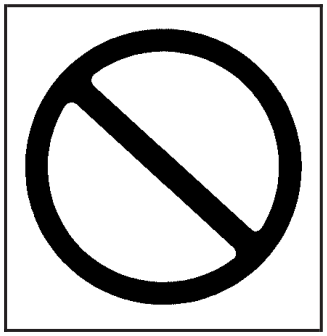
## Safety Warnings and Symbols

There are a number of safety cautions in this book. We use a box and the word CAUTION to tell about things that could hurt you if you were to ignore the warning.

**⚠ CAUTION:**

**These mean there is something that could hurt you or other people.**

In the caution area, we tell you what the hazard is. Then we tell you what to do to help avoid or reduce the hazard. Please read these cautions. If you do not, you or others could be hurt.



You will also find a circle with a slash through it in this book. This safety symbol means “Do Not,” “Do Not do this” or “Do Not let this happen.”



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## Vehicle Damage Warnings

Also, in this manual you will find these notices:

***Notice:*** **These mean there is something that could damage your vehicle.**

A notice tells about something that can damage the vehicle. Many times, this damage would not be covered by your vehicle's warranty, and it could be costly. But the notice will tell what to do to help avoid the damage.

When you read other manuals, you might see CAUTION and NOTICE warnings in different colors or in different words.

There are also warning labels on the vehicle. They use the same words, CAUTION or NOTICE.

## Vehicle Symbols

The vehicle has components and labels that use symbols instead of text. Symbols are shown along with the text describing the operation or information relating to a specific component, control, message, gage, or indicator.

If you need help figuring out a specific name of a component, gage, or indicator, reference the following topics:

- Seats and Restraint Systems in Section 1
- Features and Controls in Section 2
- Instrument Panel Overview in Section 3
- Climate Controls in Section 3
- Warning Lights, Gages, and Indicators in Section 3
- Audio System(s) in Section 3
- Engine Compartment Overview in Section 5



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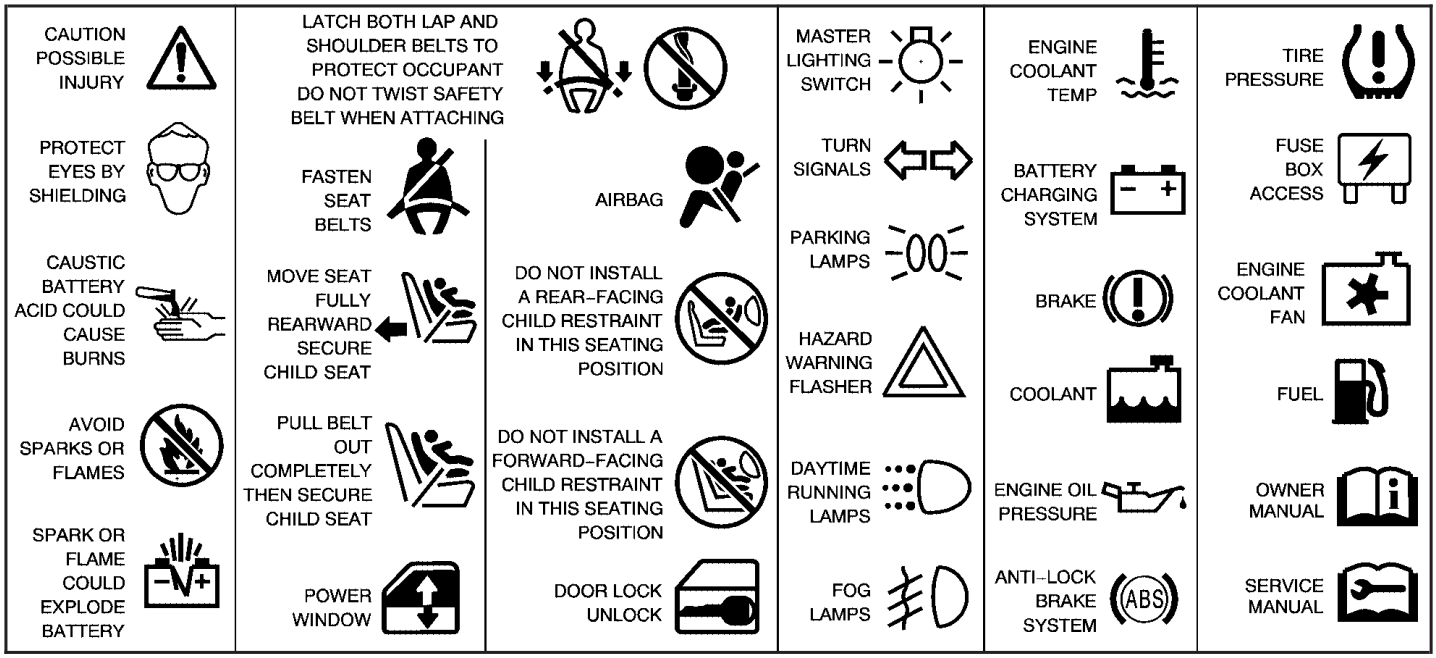
These are some examples of symbols that may be found on the vehicle:



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# Section 1 Seats and Restraint Systems


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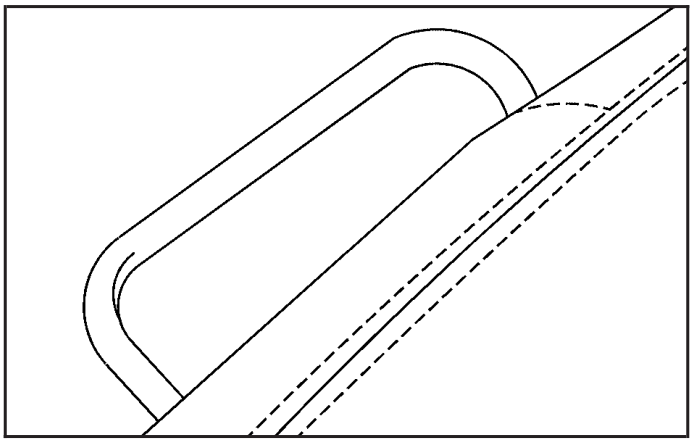
# Front Seats

## Manual Seats

**⚠ CAUTION:**

**If the seatback is not locked, it could move forward in a sudden stop or crash. That could cause injury to the person sitting there. Always push and pull on the seatback to be sure it is locked.**



Your vehicle may have manual seats. To adjust the seat, lift the bar under the front of the seat to unlock it. Slide the seat to where you want it and release the bar. Try to move the seat back and forth with your body to be sure the seat is locked in place.



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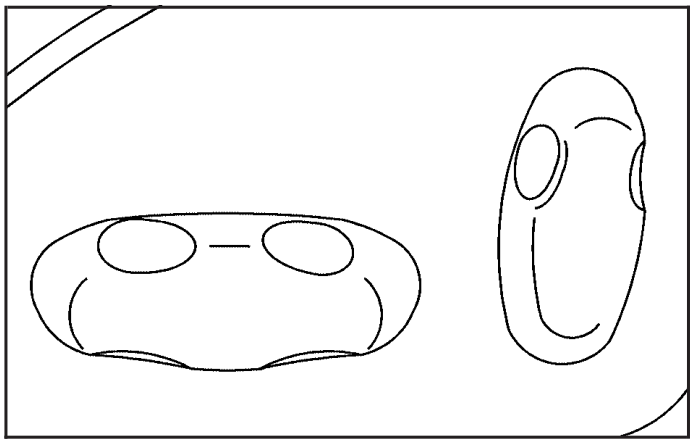
## Power Seats

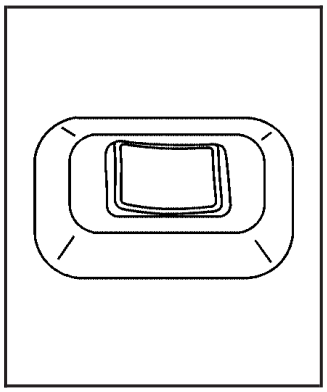


If the vehicle has power seats, the controls used to operate them are located on the outboard side of the seats.

- Move the seat forward or rearward by sliding the horizontal control forward or rearward.
- Raise or lower the front part of the seat cushion by moving the front of the horizontal control up or down.
- Raise or lower the rear part of the seat cushion by moving the rear of the horizontal control up or down.
- Raise or lower the entire seat by moving the entire horizontal control up or down.

The vertical control is used for reclining your seatback. See “Power Reclining Seatbacks” under *Reclining Seatbacks on page 14* for more information.

## Power Lumbar



Your vehicle may have this feature. The driver’s and passenger’s seatback lumbar support can be adjusted by moving the control located on the outboard side of the seat cushions.



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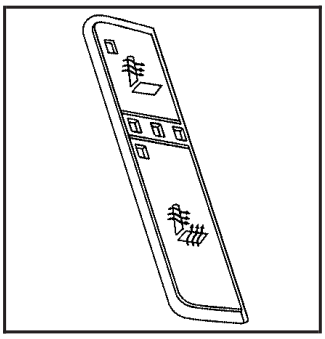
To increase or decrease support, hold the control forward or rearward. Keep in mind that as your seating position changes, as it may during long trips, so should the position of your lumbar support. Adjust the seat as needed.

## Heated Seats



Your vehicle may have heated front seats. The controls are located on the driver's and passenger's doors, near the door handle.

**(Heated Seatback):** Press this button to turn on the heated seatback.

The light on the button will come on to indicate that the feature is working. Press the button to cycle through the temperature settings of high, medium, and low and to turn the heat to the seatback off. Indicator lights next to the button show the level of heat selected: three for high, two for medium, and one for low.

**(Heated Seat and Seatback):** Press this button to turn on the heated seat and seatback.

The light on the button will come on to indicate that the feature is working. Press the button to cycle through the temperature settings of high, medium, and low and to turn the heat to the seat off. Indicator lights next to the button will show the level of heat selected: three for high, two for medium, and one for low.

The heated seats will be canceled ten seconds after the ignition is turned off. If you want to use the heated seat feature after you restart your vehicle, you will need to press the appropriate heated seat or seatback button again.



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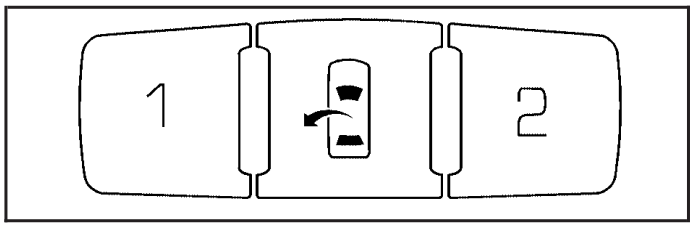
## Memory Seat and Mirrors

If your vehicle has the memory feature, you can program and recall memory settings for the driver's seating and outside rearview mirror driving positions for up to two drivers. If your vehicle has the adjustable throttle and brake pedal feature, you can also program and recall memory settings for the throttle and brake pedal driving positions.




The buttons for this feature are located on the driver's door armrest.

Use the following steps to program the buttons:

1. Adjust the driver's seat including the seatback recliner, both outside mirrors, and the throttle and brake pedals. See *Outside Power Heated Mirrors on page 137* and *Adjustable Throttle and Brake Pedal on page 120* for more information.
2. Press and hold button 1 for at least three seconds.

   Two beeps will sound to confirm that the seat and mirror positions have been saved.
3. Repeat the procedure for a second driver using button 2.

The vehicle must be in PARK (P) to recall the stored driving positions.

Press one of the numbered memory buttons to recall the stored setting. Each time a memory button is pressed, a single beep will sound.

A chime will sound and the setting will not be recalled if you press button 1 or 2 when the vehicle is not in PARK (P).

If you would like the stored driving positions to be recalled when unlocking your vehicle with the remote keyless entry transmitter or when you place the key in the ignition, see *DIC Vehicle Customization on page 231*.

To stop recall movement of the memory feature at any time, press one of the power seat or mirror controls.



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Two personalized exit positions can also be programmed. Use the following steps to program exit positions:

1. Press memory seat button 1 or the button with the unlock symbol on the remote keyless entry transmitter with the number 1 on the back to recall the driving position.
2. Adjust the driver's seat to the desired exit position.
3. Press and hold the exit button located above buttons 1 and 2 on the driver's door armrest for at least three seconds.

   Two beeps will sound to confirm that the exit position has been saved.
4. Repeat the procedure for a second driver using memory seat button 2 or the remote keyless entry transmitter with the number 2 on the back.

To recall the stored exit positions, press and release the exit button. One beep will sound, and the seat will move to the previously stored exit position for the currently identified driver. If an exit position has not been stored for this driver, the seat will move all the way back. The position of the outside mirrors is not stored or recalled for the exit position.

The vehicle must be in PARK (P) to recall the exit positions.

A chime will sound and the exit setting will not be recalled if you press the exit button when the vehicle is not in PARK (P).

If you would like your stored exit position to be recalled when unlocking the vehicle with the remote keyless entry transmitter or when the ignition is turned off and the driver's door is opened, see *DIC Vehicle Customization on page 231*.



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## Reclining Seatbacks

### Manual Reclining Seatbacks

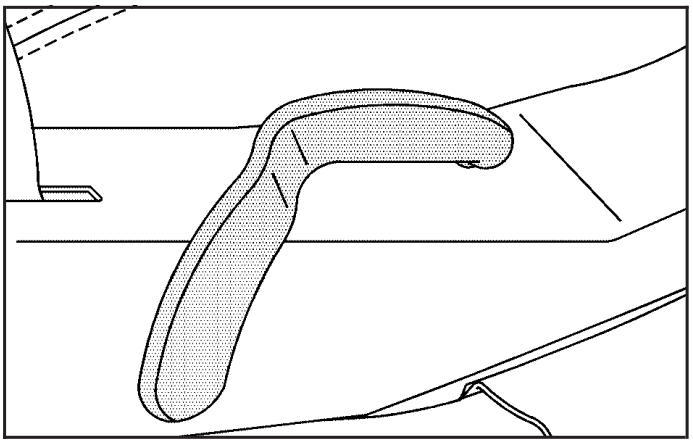
**⚠ CAUTION:**

**You can lose control of the vehicle if you try to adjust a manual driver's seat while the vehicle is moving. The sudden movement could startle and confuse you, or make you push a pedal when you do not want to. Adjust the driver's seat only when the vehicle is not moving.**

**⚠ CAUTION:**

**If the seatback is not locked, it could move forward in a sudden stop or crash. That could cause injury to the person sitting there. Always push and pull on the seatback to be sure it is locked.**

If your front passenger's seat has a manual reclining seatback, the lever used to operate it is located on the outboard side of the seat.



To recline the seatback, do the following:

1. Lift the recline lever.
2. Move the seatback to the desired position, then release the lever to lock the seatback in place.
3. Push and pull on the seatback to make sure it is locked.



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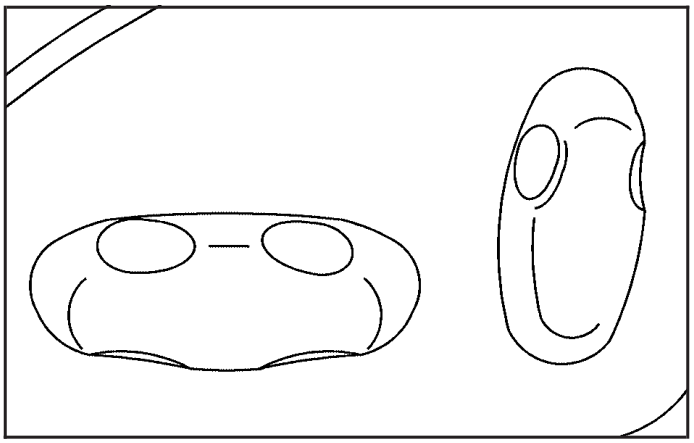
To return the seatback to an upright position, do the following:

1. Lift the lever fully without applying pressure to the seatback and the seatback will return to the upright position.
2. Push and pull on the seatback to make sure it is locked.

## Power Reclining Seatbacks



If your seats have power reclining seatbacks, use the vertical power seat control located on the outboard side of each seat.

- To recline the seatback, press the control toward the rear of the vehicle.
- To raise the seatback, press the control toward the front of the vehicle.



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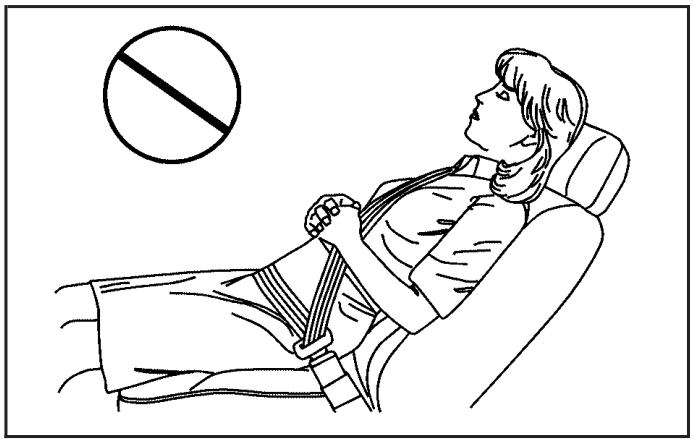

**⚠ CAUTION:**

**Sitting in a reclined position when your vehicle is in motion can be dangerous. Even if you buckle up, your safety belts cannot do their job when you are reclined like this.**

**The shoulder belt cannot do its job. In a crash, you could go into it, receiving neck or other injuries.**

**The lap belt cannot do its job either. In a crash the belt could go up over your abdomen. The belt forces would be there, not at your pelvic bones. This could cause serious internal injuries.**

**For proper protection when the vehicle is in motion, have the seatback upright. Then sit well back in the seat and wear your safety belt properly.**

Do not have a seatback reclined if your vehicle is moving.



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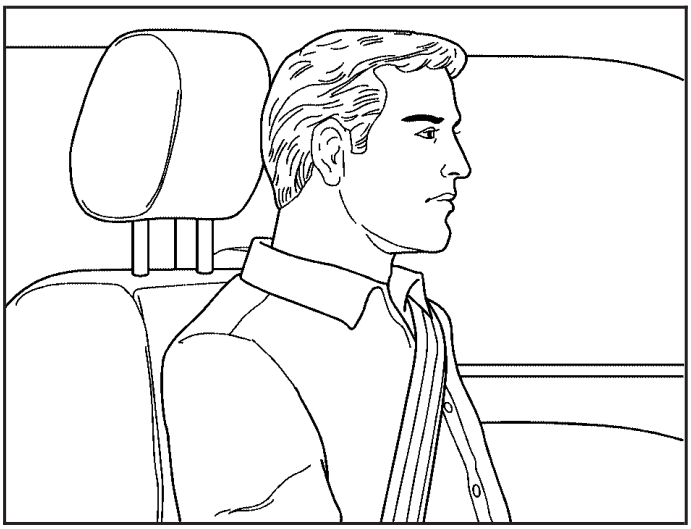
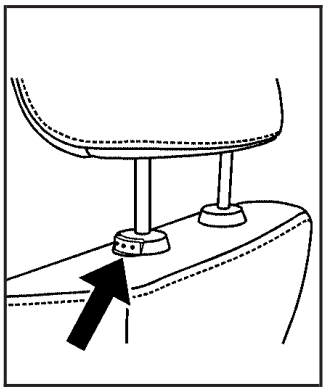
## Head Restraints



Adjust the head restraint so that the top of the restraint is at the same height as the top of the occupant's head. This position reduces the chance of a neck injury in a crash.



The height of the front seat head restraints can be adjusted. Pull the restraint up to raise it. To lower it, press the button, located on the top of the seatback, and push the head restraint down.

The front seat head restraints can also tilt forward and rearward. The second row seat head rests do not tilt.

The height of the second row seat outboard head rests and the third row seat head rests, if the vehicle has them, can be adjusted. Pull these head rests up or push them down for adjustment.

The second row seat may have a head rest in the center position.



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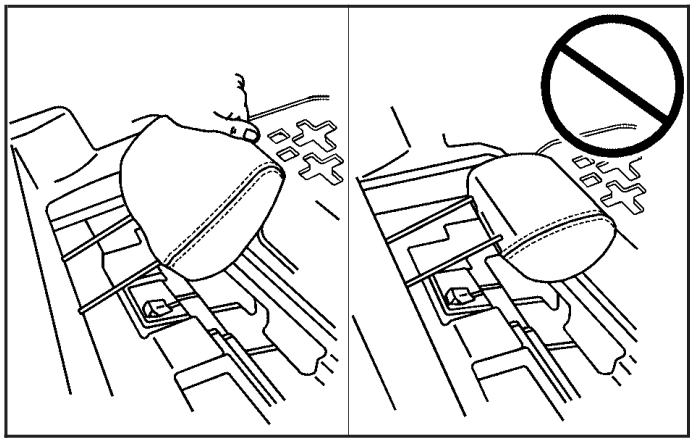
If the vehicle has third row seats, the head rests adjust like the front seat head restraints.



The third row seat head rests can be removed from the seatback. To do this, press the button, located on the top of the seatback, and pull them out from the seatback. Store the head rest, front side facing up, in the compartment behind the third row, by inserting the head rest posts into the slots in the storage area.

# Rear Seats

## Rear Seat Operation

### Adjusting the Second Row Seat

The second row seat can be adjusted forward or rearward. Pull up on the lever under the seat cushion and slide the seat with your body. Release the lever and try to move the seat forward and rearward to be sure it is locked into place.



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## Entering or Exiting the Third Row Seat

**⚠ CAUTION:**

**Be sure to return the seat to the passenger seating position when finished. Push and pull on the seat to make sure it is locked into place. Never use the third row seating position while the second row is folded, or folded and tumbled. This could cause injury in a sudden stop or crash.**

The passenger's side of the second row seat has an easy entry feature. This makes it easy to get in and out of the third row seat, if your vehicle has one.

***Notice:*** **Folding a rear seat with the safety belts still fastened may cause damage to the seat or the safety belts. Always unbuckle the safety belts and return them to their normal stowed position before folding a rear seat.**

To operate the seat, pull the release handle located on the top of the seatback. Fold the seatback forward, then pull the release handle on the top of the seatback to release the seat to tumble forward.



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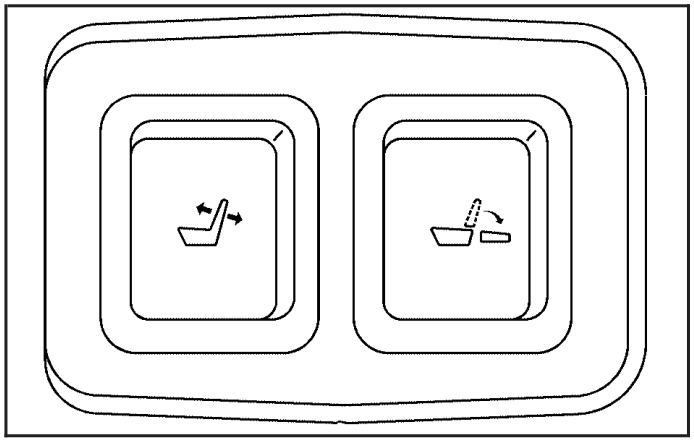
## Stowable Seat

If your vehicle has a third row seat, it is a power folding seat.

The head rests need to be removed before folding the third row seat. See *Head Restraints on page 17* for instructions for removing the third row seat head rests. The seatback will not fold all of the way down if the head rests are not removed.



**Inside Liftgate**

The buttons that are used to operate the power folding third row seat are located inside of the liftgate and behind the second row seat on the passenger's side of the vehicle.

Two buttons are located inside the liftgate. One button is to tilt the seatback forward for added storage space or when storing a flat tire. The other button is the power folding seat button. The button behind the second row seat is also a power folding seat button. Press and hold either one of the two power folding seat buttons to fold the seat.

***Notice:*** **Folding a rear seat with the safety belts still fastened may cause damage to the seat or the safety belts. Always unbuckle the safety belts and return them to their normal stowed position before folding a rear seat.**



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Before folding or unfolding the third row seat, all of the following conditions must be met:

- The liftgate or passenger's side rear door must be open.
- The unlock button on either the remote keyless entry transmitter or the door must be pressed three times to enable the rear seat for two minutes, or the ignition must be in ON or ACCESSORY.
- The vehicle must be in PARK (P).
- The vehicle cannot have a low battery.

After the seat has folded, the panel on the seat must be folded forward to create the flat floor.

If the seat's path is blocked it will stop and back away. Press the button again to return the seat to its previous position.

Before returning the third row seat to the passenger seating position, the panel must be folded back upon itself. Press and hold one of the power folding seat buttons and the seat will unfold into the seating position. If the seat is not unfolded fully into the seating position, a chime will sound when the vehicle is shifted out of PARK (P). This indicates that the seat is not ready for a passenger.

Replace the head rests.



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# Safety Belts

## Safety Belts: They Are for Everyone

This part of the manual tells you how to use safety belts properly. It also tells you some things you should not do with safety belts.

**⚠ CAUTION:**

**Do not let anyone ride where he or she cannot wear a safety belt properly. If you are in a crash and you are not wearing a safety belt, your injuries can be much worse. You can hit things inside the vehicle or be ejected from it. You can be seriously injured or killed. In the same crash, you might not be, if you are buckled up. Always fasten your safety belt, and check that your passengers' belts are fastened properly too.**

**⚠ CAUTION:**

**It is extremely dangerous to ride in a cargo area, inside or outside of a vehicle. In a collision, people riding in these areas are more likely to be seriously injured or killed. Do not allow people to ride in any area of your vehicle that is not equipped with seats and safety belts. Be sure everyone in your vehicle is in a seat and using a safety belt properly.**

Your vehicle has a light that comes on as a reminder to buckle up. See *Safety Belt Reminder Light on page 200*.



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In most states and in all Canadian provinces, the law says to wear safety belts. Here is why: *They work*.

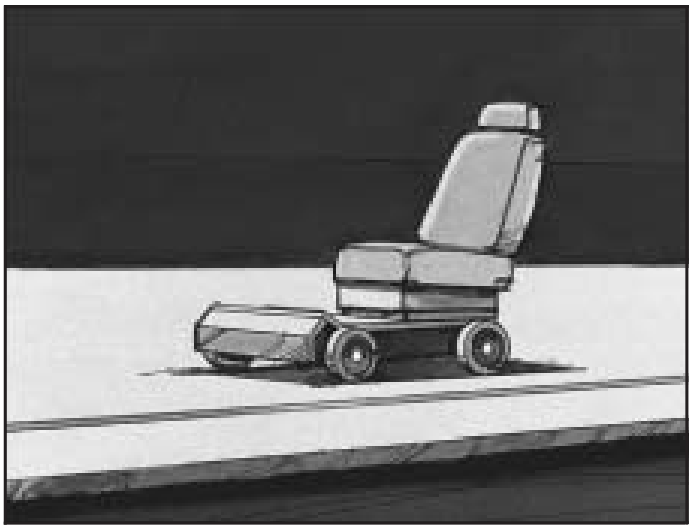
You never know if you will be in a crash. If you do have a crash, you do not know if it will be a bad one.

A few crashes are mild, and some crashes can be so serious that even buckled up, a person would not survive. But most crashes are in between. In many of them, people who buckle up can survive and sometimes walk away. Without belts they could have been badly hurt or killed.

After more than 40 years of safety belts in vehicles, the facts are clear. In most crashes buckling up does matter... a lot!

## Why Safety Belts Work

When you ride in or on anything, you go as fast as it goes.



Take the simplest vehicle. Suppose it is just a seat on wheels.



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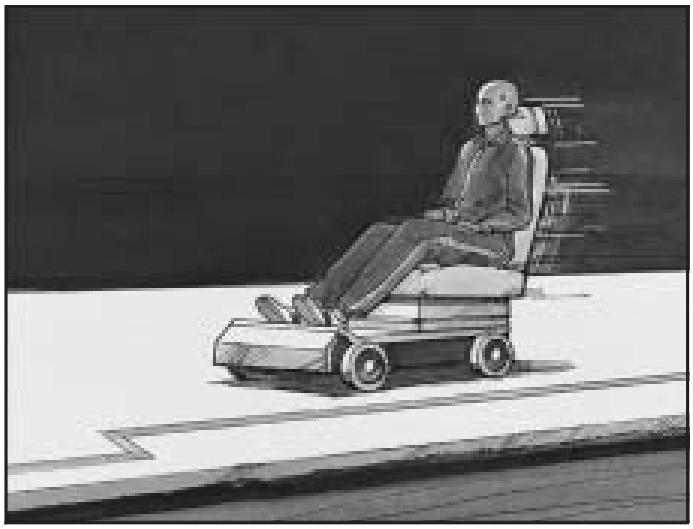
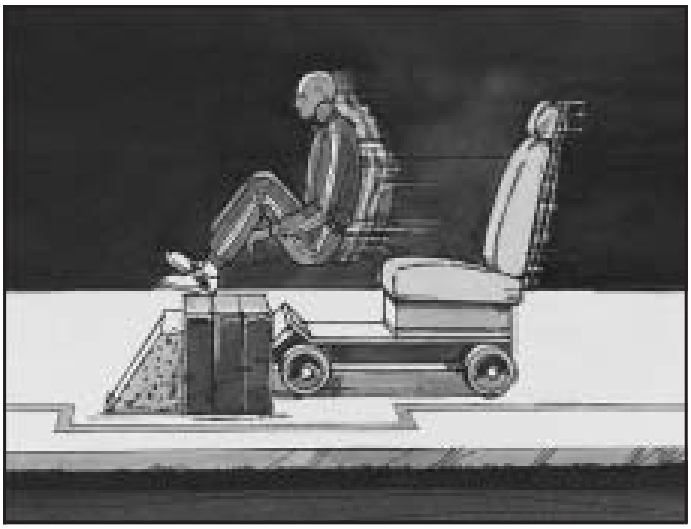


Put someone on it.



Get it up to speed. Then stop the vehicle. The rider does not stop.



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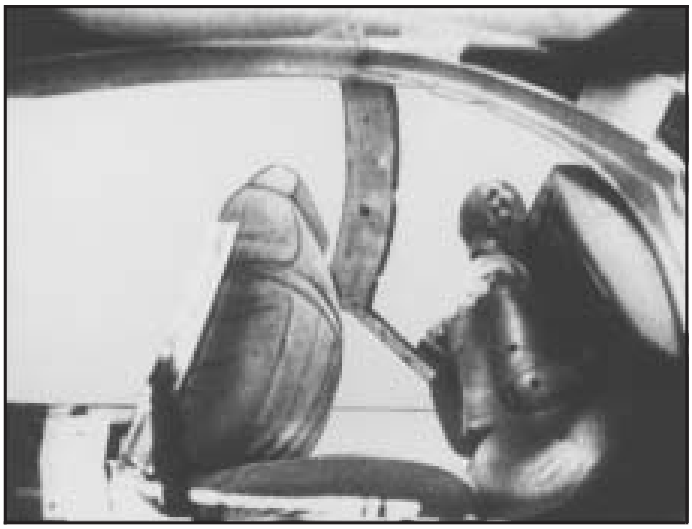
The person keeps going until stopped by something. In a real vehicle, it could be the windshield...



or the instrument panel...



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or the safety belts!

With safety belts, you slow down as the vehicle does. You get more time to stop. You stop over more distance, and your strongest bones take the forces. That is why safety belts make such good sense.

## Questions and Answers About Safety Belts

**Q: Will I be trapped in the vehicle after an accident if I am wearing a safety belt?**

**A:** You *could* be — whether you are wearing a safety belt or not. But you can unbuckle a safety belt, even if you are upside down. And your chance of being conscious during and after an accident, so you *can* unbuckle and get out, is *much* greater if you are belted.

**Q: If my vehicle has airbags, why should I have to wear safety belts?**

**A:** Airbags are supplemental systems only; so they work *with* safety belts — not instead of them. Every airbag system ever offered for sale has required the use of safety belts. Even if you are in a vehicle that has airbags, you still have to buckle up to get the most protection. That is true not only in frontal collisions, but especially in side and other collisions.



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**Q: If I am a good driver, and I never drive far from home, why should I wear safety belts?**

**A:** You may be an excellent driver, but if you are in an accident — even one that is not your fault — you and your passengers can be hurt. Being a good driver does not protect you from things beyond your control, such as bad drivers.

Most accidents occur within 25 miles (40 km) of home. And the greatest number of serious injuries and deaths occur at speeds of less than 40 mph (65 km/h).

Safety belts are for everyone.

## How to Wear Safety Belts Properly

This part is only for people of adult size.

Be aware that there are special things to know about safety belts and children. And there are different rules for smaller children and babies. If a child will be riding in your vehicle, see *Older Children on page 43* or *Infants and Young Children on page 46*. Follow those rules for everyone's protection.

First, you will want to know which restraint systems your vehicle has.

We will start with the driver position.

## Driver Position

### Lap-Shoulder Belt

The driver has a lap-shoulder belt. Here is how to wear it properly.

1. Close and lock the door.
2. Adjust the seat so you can sit up straight. To see how, see "Seats" in the Index.



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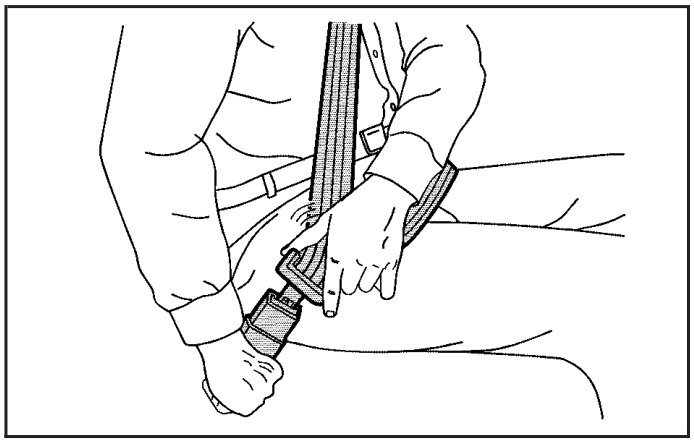


3. Pick up the latch plate and pull the belt across you. Do not let it get twisted.

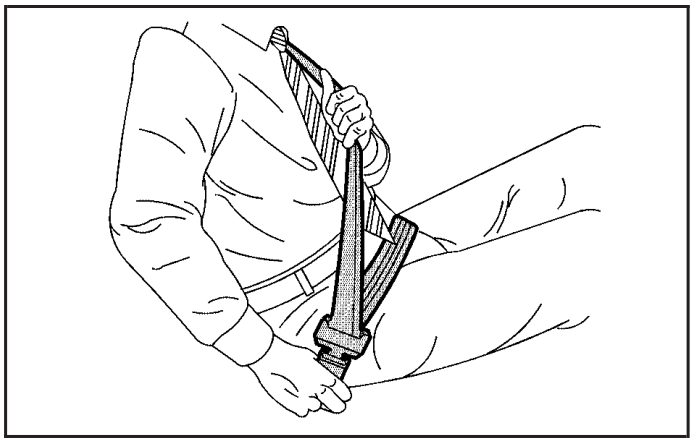
   The lap-shoulder belt may lock if you pull the belt across you very quickly. If this happens, let the belt go back slightly to unlock it. Then pull the belt across you more slowly.

4. Push the latch plate into the buckle until it clicks.

   Pull up on the latch plate to make sure it is secure.

   If the belt is not long enough, see *Safety Belt Extender on page 42*.

   Make sure the release button on the buckle is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.



5. To make the lap part tight, pull up on the shoulder belt.

   It may be necessary to pull stitching on the safety belt through the latch plate to fully tighten the lap belt on smaller occupants.



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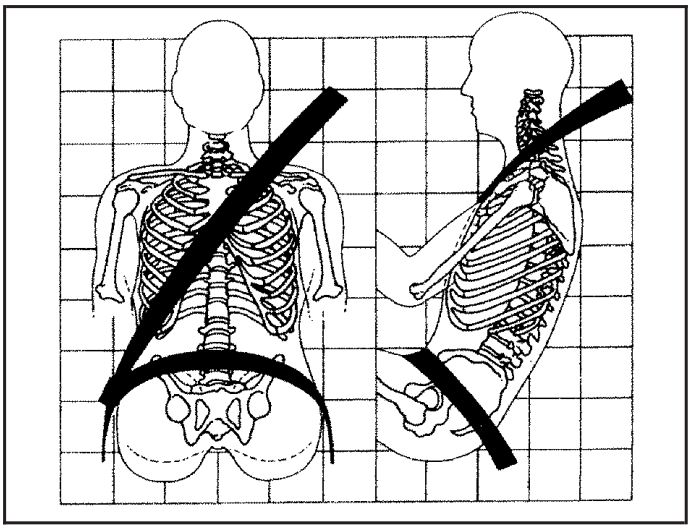

The lap part of the belt should be worn low and snug on the hips, just touching the thighs. In a crash, this applies force to the strong pelvic bones. And you would be less likely to slide under the lap belt. If you slid under it, the belt would apply force at your abdomen. This could cause serious or even fatal injuries. The shoulder belt should go over the shoulder and across the chest. These parts of the body are best able to take belt restraining forces.

The safety belt locks if there is a sudden stop or crash.



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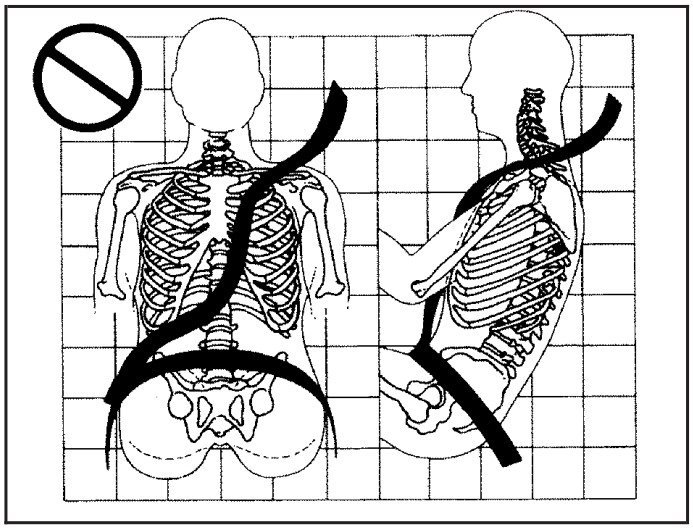
**Q: What is wrong with this?**



**A:** The shoulder belt is too loose. It will not give nearly as much protection this way.

**⚠ CAUTION:**

**You can be seriously hurt if your shoulder belt is too loose. In a crash, you would move forward too much, which could increase injury. The shoulder belt should fit against your body.**



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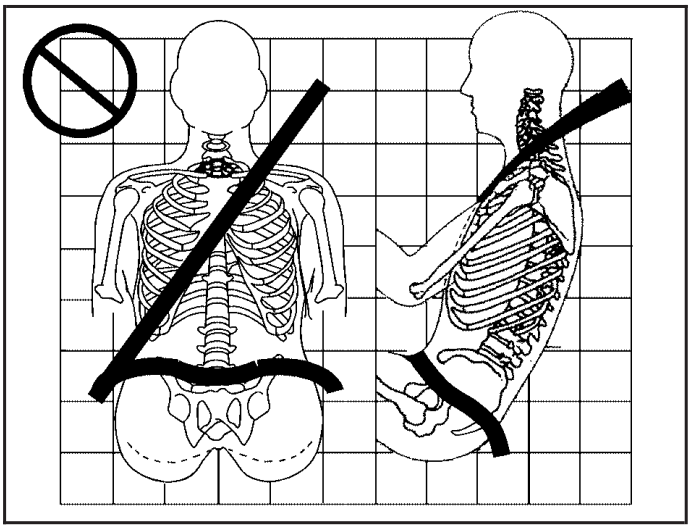
**Q: What is wrong with this?**



**A:** The lap belt is too loose. It will not give nearly as much protection this way.

**⚠ CAUTION:**

**You can be seriously hurt if your lap belt is too loose. In a crash, you could slide under the lap belt and apply force at your abdomen. This could cause serious or even fatal injuries. The lap belt should be worn low and snug on the hips, just touching the thighs.**



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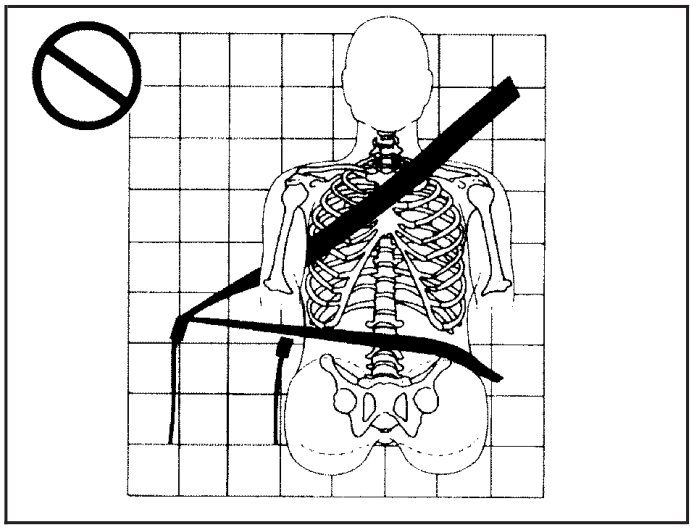
**Q: What is wrong with this?**



**A:** The belt is buckled in the wrong place.

**⚠ CAUTION:**

**You can be seriously injured if your belt is buckled in the wrong place like this. In a crash, the belt would go up over your abdomen. The belt forces would be there, not at the pelvic bones. This could cause serious internal injuries. Always buckle your belt into the buckle nearest you.**



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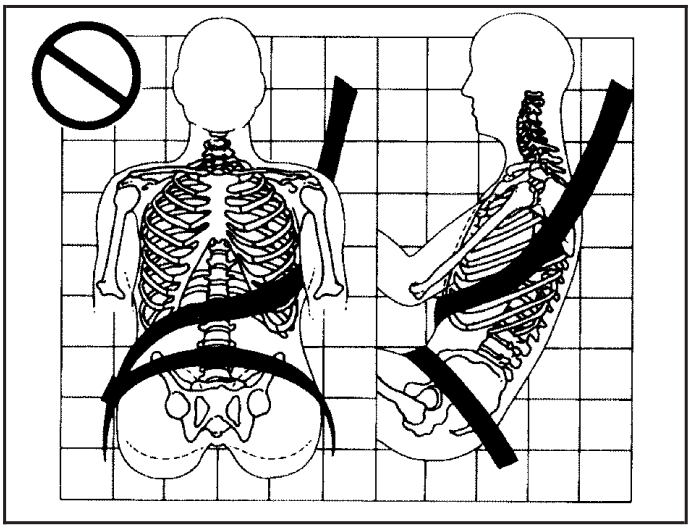
**Q: What is wrong with this?**



**A:** The shoulder belt is worn under the arm. It should be worn over the shoulder at all times.

**⚠ CAUTION:**

**You can be seriously injured if you wear the shoulder belt under your arm. In a crash, your body would move too far forward, which would increase the chance of head and neck injury. Also, the belt would apply too much force to the ribs, which are not as strong as shoulder bones. You could also severely injure internal organs like your liver or spleen.**



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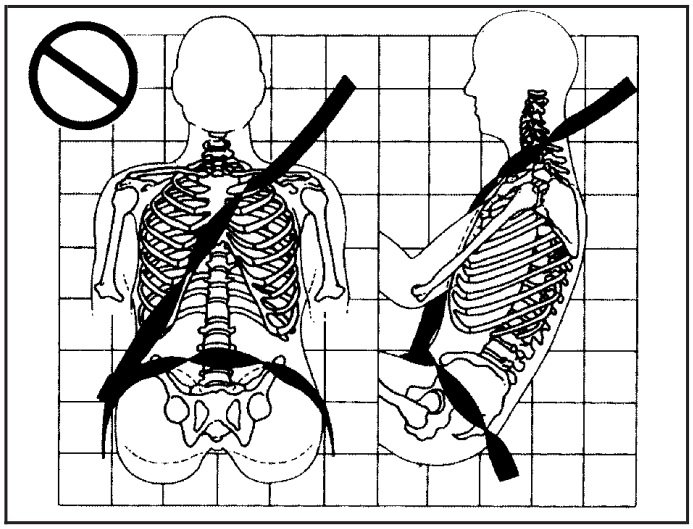
**Q: What is wrong with this?**



**A:** The belt is twisted across the body.

**⚠ CAUTION:**

**You can be seriously injured by a twisted belt. In a crash, you would not have the full width of the belt to spread impact forces. If a belt is twisted, make it straight so it can work properly, or ask your dealer to fix it.**



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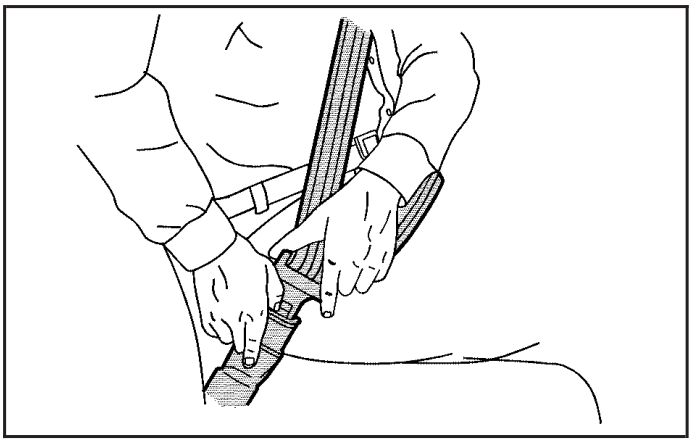
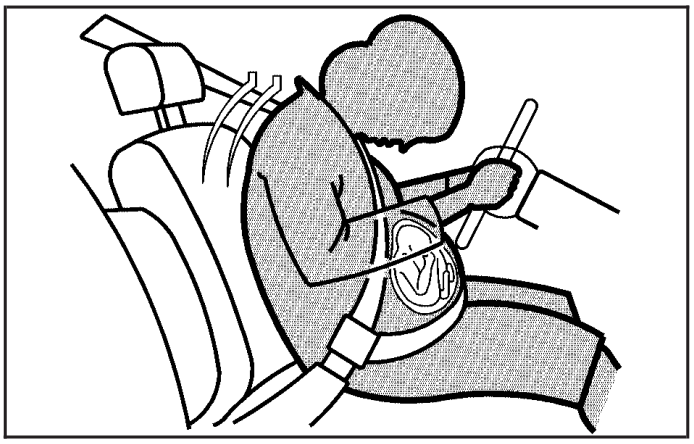


To unlatch the belt, push the button on the buckle. The belt should go back out of the way.

Before you close the door, be sure the belt is out of the way. If you slam the door on it, you can damage both the belt and your vehicle.

## Safety Belt Use During Pregnancy

Safety belts work for everyone, including pregnant women. Like all occupants, they are more likely to be seriously injured if they do not wear safety belts.



A pregnant woman should wear a lap-shoulder belt, and the lap portion should be worn as low as possible, below the rounding, throughout the pregnancy.



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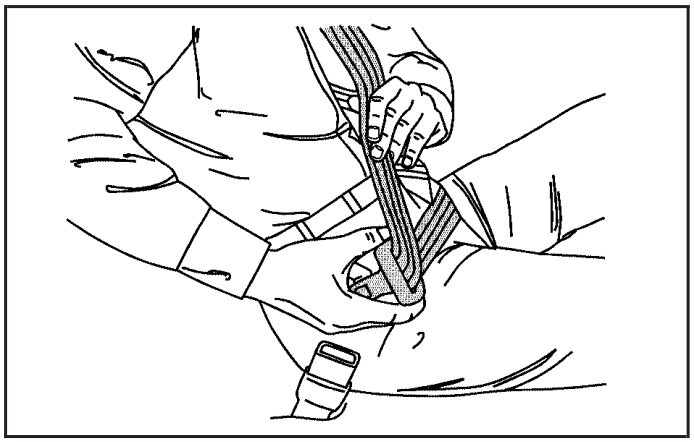
The best way to protect the fetus is to protect the mother. When a safety belt is worn properly, it is more likely that the fetus will not be hurt in a crash. For pregnant women, as for anyone, the key to making safety belts effective is wearing them properly.

## Right Front Passenger Position

To learn how to wear the right front passenger's safety belt properly, see *Driver Position on page 27*.

The right front passenger's safety belt works the same way as the driver's safety belt — except for one thing.



If the belt stops before it reaches the buckle, tilt the latch plate and keep pulling until you can buckle the belt.

## Rear Seat Passengers

It is very important for rear seat passengers to buckle up! Accident statistics show that unbelted people in the rear seat are hurt more often in crashes than those who are wearing safety belts.



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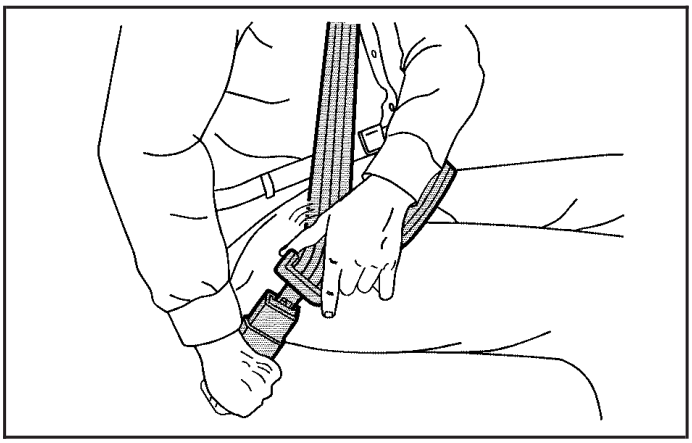
Rear passengers who are not safety belted can be thrown out of the vehicle in a crash. And they can strike others in the vehicle who are wearing safety belts.

## Lap-Shoulder Belt

All rear seat positions have lap-shoulder belts. Here is how to wear one properly.



1. Pick up the latch plate and pull the belt across you. Do not let it get twisted.

   The shoulder belt may lock if you pull the belt across you very quickly. If this happens, let the belt go back slightly to unlock it. Then pull the belt across you more slowly.

2. Push the latch plate into the buckle until it clicks.

   Pull up on the latch plate to make sure it is secure.

   When the shoulder belt is pulled out all the way, it will lock. If it does, let it go back all the way and start again.

   If the belt is not long enough, see *Safety Belt Extender on page 42*.

   Make sure the release button on the buckle is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.



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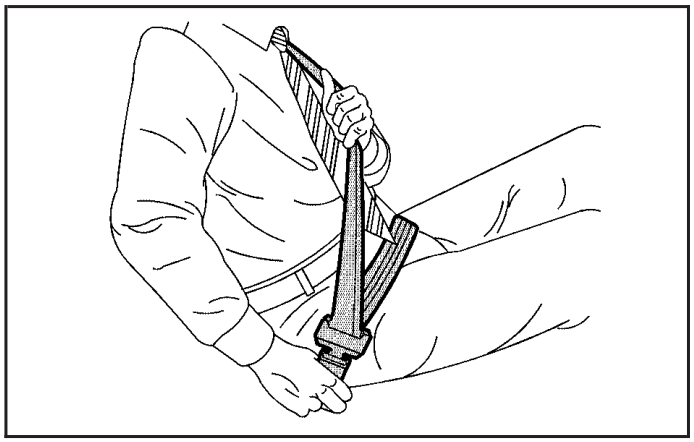
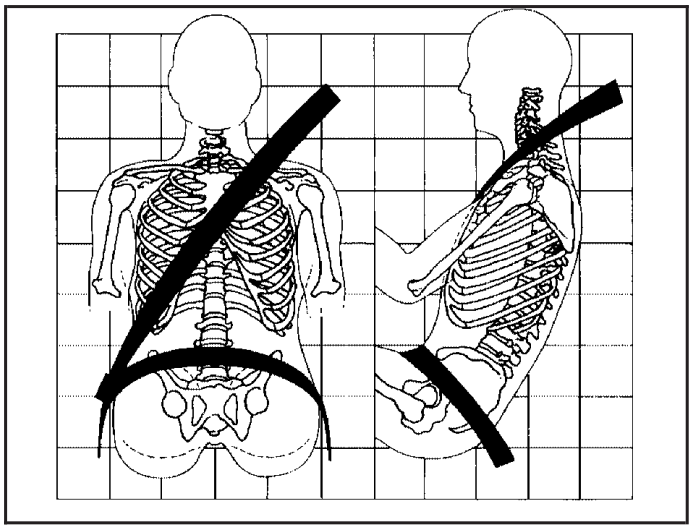


3. To make the lap part tight, pull up on the shoulder part.



The lap part of the belt should be worn low and snug on the hips, just touching the thighs. In a crash, this applies force to the strong pelvic bones. And you would be less likely to slide under the lap belt. If you slid under it, the belt would apply force at your abdomen. This could cause serious or even fatal injuries. The shoulder belt should go over the shoulder and across the chest. These parts of the body are best able to take belt restraining forces.

The safety belt locks if there is a sudden stop or a crash.



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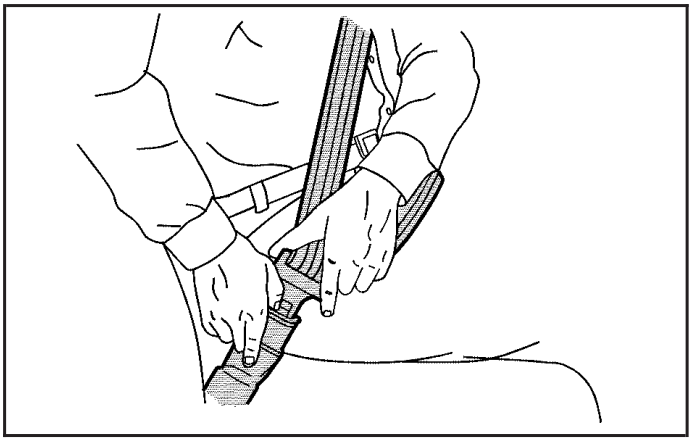
## ⚠ CAUTION:

**You can be seriously hurt if your shoulder belt is too loose. In a crash, you would move forward too much, which could increase injury. The shoulder belt should fit against your body.**



To unlatch the belt, push the button on the buckle.

## Rear Safety Belt Comfort Guides

Rear shoulder belt comfort guides may provide added safety belt comfort for older children who have outgrown booster seats and for small adults. When installed on a shoulder belt, the comfort guide better positions the belt away from the neck and head.

There is one guide available for each of the rear outside passenger positions in the second row.



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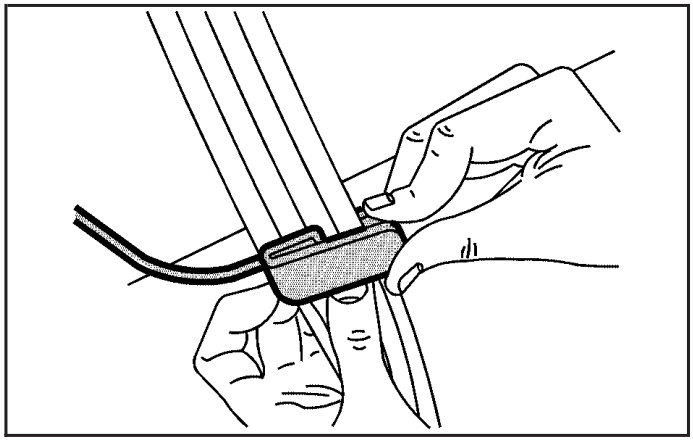
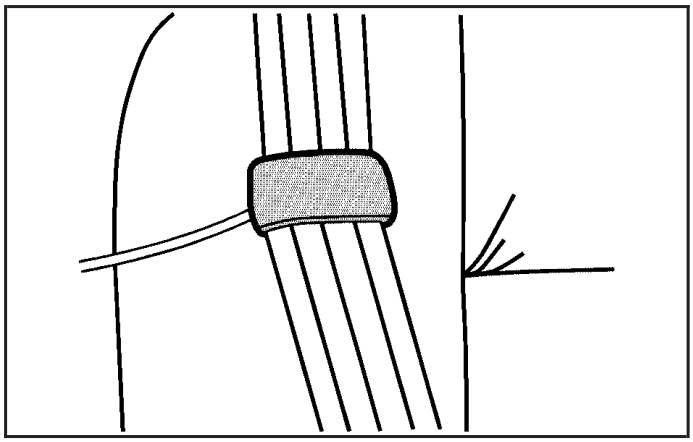
Here is how to install the comfort guide to the shoulder belt.

1. Slide the guide off of its storage clip located on the seatback.



2. Slide the guide under and past the belt. The elastic cord must be under the belt. Then, place the guide over the belt and insert the two edges of the belt into the slots of the guide.



3. Be sure that the belt is not twisted and it lies flat. The elastic cord must be under the belt and the guide on top.



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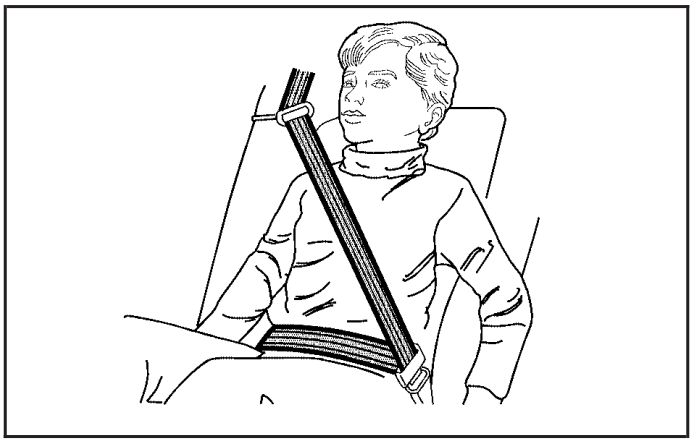
**⚠ CAUTION:**

**A safety belt that is not properly worn may not provide the protection needed in a crash. The person wearing the belt could be seriously injured. The shoulder belt should go over the shoulder and across the chest. These parts of the body are best able to take belt restraining forces.**



4. Buckle, position, and release the safety belt as described in *Rear Seat Passengers on page 36*. Make sure that the shoulder belt crosses the shoulder.

To remove and store the comfort guide, squeeze the belt edges together so that you can take them out of the guide. Slide the guide back on its storage clip located on the seatback.



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## Safety Belt Pretensioners

Your vehicle has safety belt pretensioners for the driver and right front passenger. Although you cannot see them, they are part of the safety belt assembly. They help tighten the safety belts during the early stages of a moderate to severe frontal or near frontal crash if the threshold conditions for pretensioner activation are met. And, if your vehicle has side impact rollover airbags, safety belt pretensioners can help tighten the safety belts in a side crash or a rollover event.

Pretensioners work only once. If they activate in a crash, you will need to get new ones, and probably other new parts for your safety belt system. See *Replacing Restraint System Parts After a Crash on page 90*.

## Safety Belt Extender

If the vehicle's safety belt will fasten around you, you should use it.

But if a safety belt is not long enough, your dealer will order you an extender. When you go in to order it, take the heaviest coat you will wear, so the extender will be long enough for you. To help avoid personal injury, do not let someone else use it, and use it only for the seat it is made to fit. The extender has been designed for adults. Never use it for securing child seats. To wear it, just attach it to the regular safety belt. For more information see the instruction sheet that comes with the extender.



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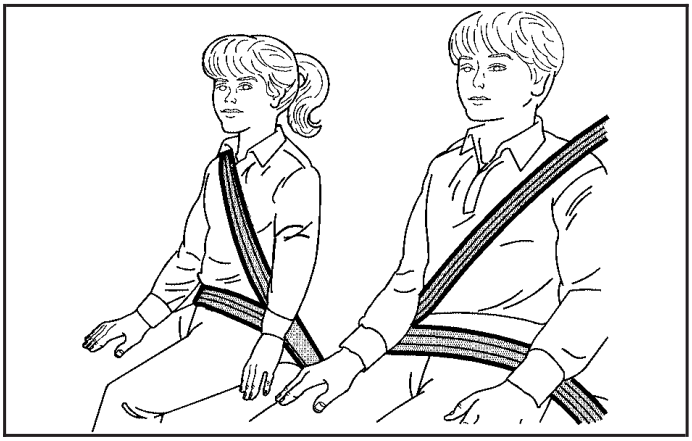
# Child Restraints

## Older Children



Older children who have outgrown booster seats should wear the vehicle's safety belts.

**Q: What is the proper way to wear safety belts?**

**A:** An older child should wear a lap-shoulder belt and get the additional restraint a shoulder belt can provide. The shoulder belt should not cross the face or neck. The lap belt should fit snugly below the hips, just touching the top of the thighs. It should never be worn over the abdomen, which could cause severe or even fatal internal injuries in a crash.

According to accident statistics, children are safer when properly restrained in the rear seating positions than in the front seating positions.

In a crash, children who are not buckled up can strike other people who are buckled up, or can be thrown out of the vehicle. Older children need to use safety belts properly.



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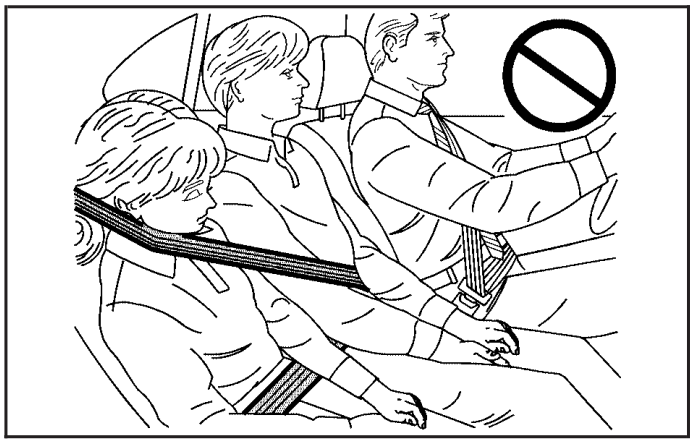
## ⚠ CAUTION:

**Never do this.**

**Here two children are wearing the same belt. The belt cannot properly spread the impact forces. In a crash, the two children can be crushed together and seriously injured. A belt must be used by only one person at a time.**



**Q: What if a child is wearing a lap-shoulder belt, but the child is so small that the shoulder belt is very close to the child's face or neck?**

**A:** If the child is sitting in a seat next to a window, move the child toward the center of the vehicle. Also see *Rear Safety Belt Comfort Guides on page 39*. If the child is sitting in the center rear seat passenger position, move the child toward the safety belt buckle. In either case, be sure that the shoulder belt still is on the child's shoulder, so that in a crash the child's upper body would have the restraint that belts provide.



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## ⚠ CAUTION:

**Never do this.**

**Here a child is sitting in a seat that has a lap-shoulder belt, but the shoulder part is behind the child. If the child wears the belt in this way, in a crash the child might slide under the belt. The belt's force would then be applied right on the child's abdomen. That could cause serious or fatal injuries.**

Wherever the child sits, the lap portion of the belt should be worn low and snug on the hips, just touching the child's thighs. This applies belt force to the child's pelvic bones in a crash.



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## Infants and Young Children

Everyone in a vehicle needs protection! This includes infants and all other children. Neither the distance traveled nor the age and size of the traveler changes the need, for everyone, to use safety restraints. In fact, the law in every state in the United States and in every Canadian province says children up to some age must be restrained while in a vehicle.

**⚠ CAUTION:**

**Children can be seriously injured or strangled if a shoulder belt is wrapped around their neck and the safety belt continues to tighten. Never leave children unattended in a vehicle and never allow children to play with the safety belts.**

Every time infants and young children ride in vehicles, they should have the protection provided by appropriate restraints.

Young children should not use the vehicle's adult safety belts alone, unless there is no other choice. Instead, they need to use a child restraint.

**⚠ CAUTION:**

**People should never hold a baby in their arms while riding in a vehicle. A baby does not weigh much — until a crash. During a crash a baby will become so heavy it is not possible to hold it. For example, in a crash at only 25 mph (40 km/h), a 12 lb (5.5 kg) baby will suddenly become a 240 lb (110 kg) force on a person's arms. A baby should be secured in an appropriate restraint.**



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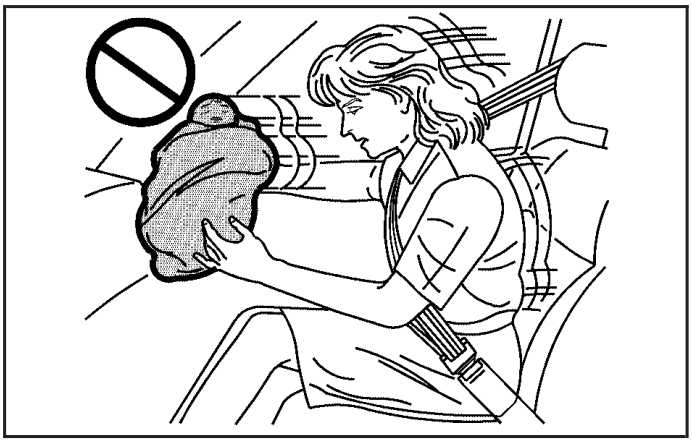


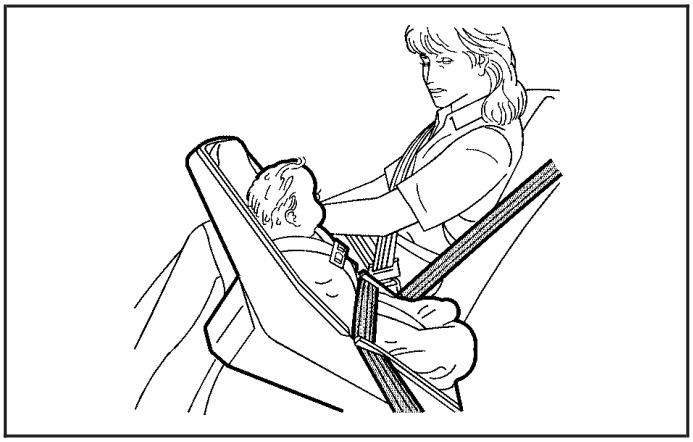
**⚠ CAUTION:**

**Children who are up against, or very close to, any airbag when it inflates can be seriously injured or killed. Airbags plus lap-shoulder belts offer protection for adults and older children, but not for**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

**young children and infants. Neither the vehicle's safety belt system nor its airbag system is designed for them. Young children and infants need the protection that a child restraint system can provide.**





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**Q: What are the different types of add-on child restraints?**

**A:** Add-on child restraints, which are purchased by the vehicle's owner, are available in four basic types. Selection of a particular restraint should take into consideration not only the child's weight, height, and age but also whether or not the restraint will be compatible with the motor vehicle in which it will be used.

For most basic types of child restraints, there are many different models available. When purchasing a child restraint, be sure it is designed to be used in a motor vehicle. If it is, the restraint will have a label saying that it meets federal motor vehicle safety standards.

The restraint manufacturer's instructions that come with the restraint state the weight and height limitations for a particular child restraint. In addition, there are many kinds of restraints available for children with special needs.

**⚠ CAUTION:**

**Newborn infants need complete support, including support for the head and neck. This is necessary because a newborn infant's neck is weak and its head weighs so much compared with the rest of its body. In a crash, an infant in a rear-facing seat settles into the restraint, so the crash forces can be distributed across the strongest part of an infant's body, the back and shoulders. Infants always should be secured in appropriate infant restraints.**



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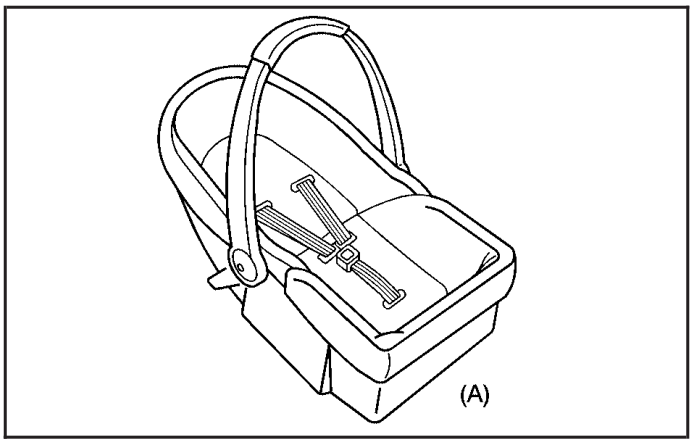
## ⚠ CAUTION:

**The body structure of a young child is quite unlike that of an adult or older child, for whom the safety belts are designed. A young child's hip bones are still so small that the vehicle's regular safety belt may not remain low on the hip bones, as it should. Instead, it may settle up around the child's abdomen. In a crash, the belt would apply force on a body area that is unprotected by any bony structure. This alone could cause serious or fatal injuries. Young children always should be secured in appropriate child restraints.**

## Child Restraint Systems




An infant car bed (A), a special bed made for use in a motor vehicle, is an infant restraint system designed to restrain or position a child on a continuous flat surface. Make sure that the infant's head rests toward the center of the vehicle.



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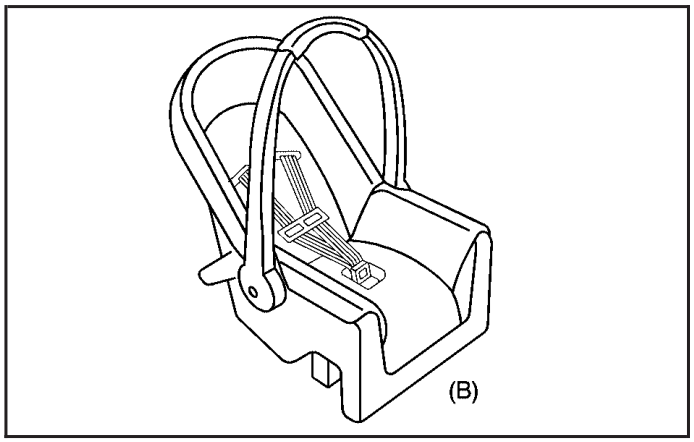
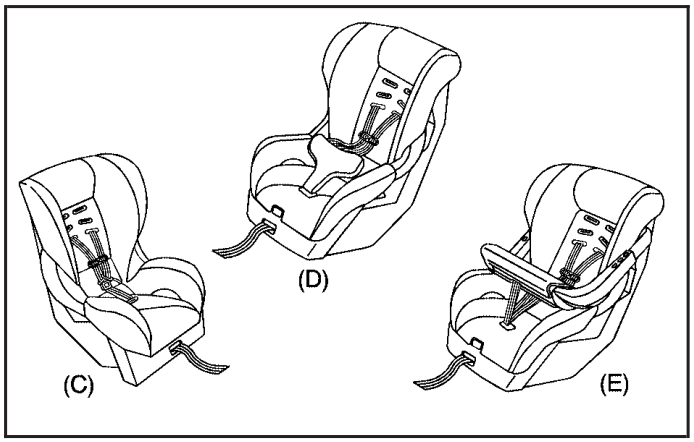



A rear-facing infant seat (B) provides restraint with the seating surface against the back of the infant. The harness system holds the infant in place and, in a crash, acts to keep the infant positioned in the restraint.




A forward-facing child seat (C-E) provides restraint for the child's body with the harness and also sometimes with surfaces such as T-shaped or shelf-like shields.



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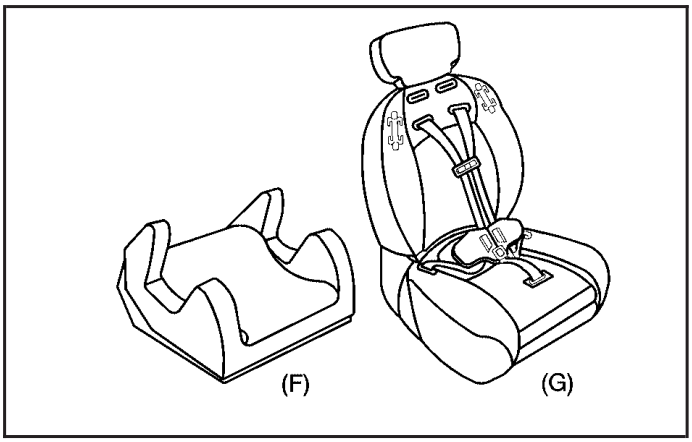


A booster seat (F-G) is a child restraint designed to improve the fit of the vehicle's safety belt system. Some booster seats have a shoulder belt positioner, and some high-back booster seats have a five-point harness. A booster seat can also help a child to see out the window.

**Q: How Should I Use a Child Restraint?**

**A:** A child restraint system is any device designed for use in a motor vehicle to restrain, seat, or position children. A built-in child restraint system is a permanent part of the motor vehicle. An add-on child restraint system is a portable one, which is purchased by the vehicle's owner. To help reduce injuries, an add-on child restraint must be secured in the vehicle. With built-in or add-on child restraints, the child has to be secured within the child restraint.

When choosing an add-on child restraint, be sure the child restraint is designed to be used in a vehicle. If it is, it will have a label saying that it meets federal motor vehicle safety standards. Then follow the instructions for the restraint. You may find these instructions on the restraint itself or in a booklet, or both.



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## Securing an Add-on Child Restraint in the Vehicle

### ⚠ CAUTION:

**A child can be seriously injured or killed in a crash if the child restraint is not properly secured in the vehicle. Make sure the child restraint is properly installed in the vehicle using the vehicle's safety belt or LATCH system, following the instructions that came with that restraint, and also the instructions in this manual.**

To help reduce the chance of injury, the child restraint must be secured in the vehicle. Child restraint systems must be secured in vehicle seats by lap belts or the lap belt portion of a lap-shoulder belt, or by the LATCH system.

See *Lower Anchors and Tethers for Children (LATCH) on page 55* for more information. A child can be endangered in a crash if the child restraint is not properly secured in the vehicle.

When securing an add-on child restraint, refer to the instructions that come with the restraint which may be on the restraint itself or in a booklet, or both, and to this manual. The child restraint instructions are important, so if they are not available, obtain a replacement copy from the manufacturer.

Keep in mind that an unsecured child restraint can move around in a collision or sudden stop and injure people in the vehicle. Be sure to properly secure any child restraint in your vehicle — even when no child is in it.



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## Securing the Child Within the Child Restraint

There are several systems for securing the child within the child restraint. One system, the three-point harness, has straps that come down over each of the infant's shoulders and buckle together at the crotch. The five-point harness system has two shoulder straps, two hip straps, and a crotch strap. A shield may take the place of hip straps. A T-shaped shield has shoulder straps that are attached to a flat pad which rests low against the child's body. A shelf- or armrest-type shield has straps that are attached to a wide, shelf-like shield that swings up or to the side.

**⚠ CAUTION:**

**A child can be seriously injured or killed in a crash if the child is not properly secured in the child restraint. Make sure the child is properly secured, following the instructions that came with that restraint.**

Because there are different systems, it is important to refer to the instructions that come with the restraint. A child can be endangered in a crash if the child is not properly secured in the child restraint.

## Where to Put the Restraint

Accident statistics show that children are safer if they are restrained in the rear rather than the front seat. We recommend that child restraints be secured in a rear seat, including an infant riding in a rear-facing infant seat, a child riding in a forward-facing child seat and an older child riding in a booster seat.



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Your vehicle has a rear seat that will accommodate a rear-facing child restraint. A label on your sun visor says, “Never put a rear-facing child seat in the front.” This is because the risk to the rear-facing child is so great, if the airbag deploys.

**⚠ CAUTION:**

**A child in a rear-facing child restraint can be seriously injured or killed if the right front passenger’s airbag inflates. This is because the back of the rear-facing child restraint would be very close to the inflating airbag.**

**Even though the passenger sensing system is designed to turn off the passenger’s frontal airbag if the system detects a rear-facing child restraint, no system is fail-safe, and no one can**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

**guarantee that an airbag will not deploy under some unusual circumstance, even though it is turned off. We recommend that rear-facing child restraints be secured in the rear seat, even if the airbag is off.**

**If you need to secure a forward-facing child restraint in the right front seat, always move the front passenger seat as far back as it will go. It is better to secure the child restraint in a rear seat.**

Wherever you install a child restraint, be sure to secure the child restraint properly.

Keep in mind that an unsecured child restraint can move around in a collision or sudden stop and injure people in the vehicle. Be sure to properly secure any child restraint in your vehicle — even when no child is in it.



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## Lower Anchors and Tethers for Children (LATCH)

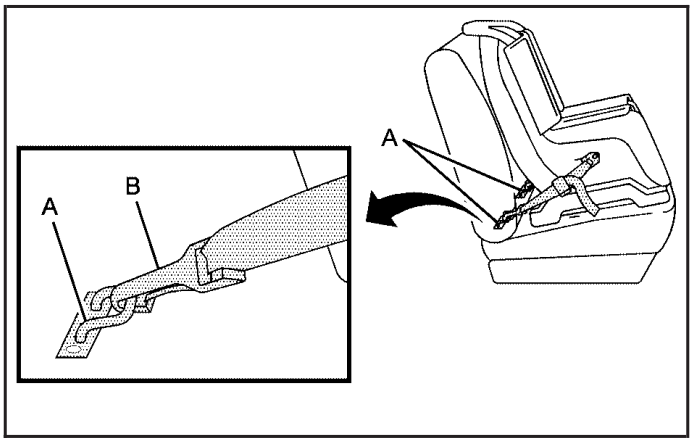
The LATCH system holds a child restraint during driving or in a crash. This system is designed to make installation of a child restraint easier. The LATCH system uses anchors in the vehicle and attachments on the child restraint that are made for use with the LATCH system.

Make sure that a LATCH-compatible child restraint is properly installed using the anchors, or use the vehicle's safety belts to secure the restraint, following the instructions that came with that restraint, and also the instructions in this manual. When installing a child restraint with a top tether, you must also use either the lower anchors or the safety belts to properly secure the child restraint. A child restraint must never be installed using only the top tether and anchor.

In order to use the LATCH system in your vehicle, you need a child restraint that has LATCH attachments. The child restraint manufacturer will provide you with instructions on how to use the child restraint and its attachments. The following explains how to attach a child restraint with these attachments in your vehicle.

Not all vehicle seating positions or child restraints have lower anchors and attachments or top tether anchors and attachments.

### Lower Anchors




Lower anchors (A) are metal bars built into the vehicle. There are two lower anchors for each LATCH seating position that will accommodate a child restraint with lower attachments (B).



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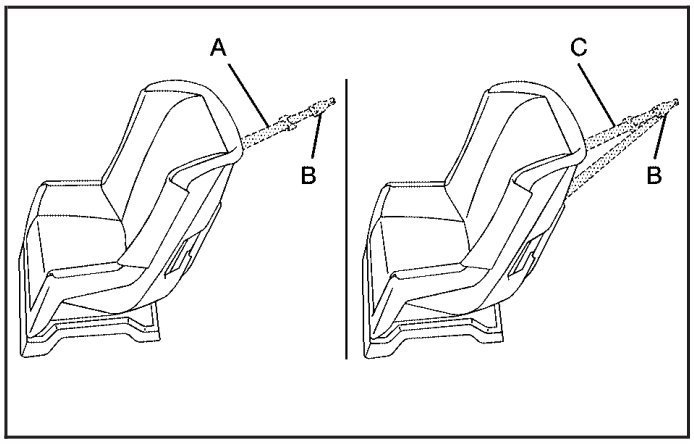
## Top Tether Anchor




A top tether (A, C) anchors the top of the child restraint to the vehicle. A top tether anchor is built into the vehicle. The top tether attachment (B) on the child restraint connects to the top tether anchor in the vehicle in order to reduce the forward movement and rotation of the child restraint during driving or in a crash.

Your child restraint may have a single tether (A) or a dual tether (C). Either will have a single attachment (B) to secure the top tether to the anchor.

Some child restraints that have a top tether are designed for use with or without the top tether being attached. Others require the top tether always to be attached. In Canada, the law requires that forward-facing child restraints have a top tether, and that the tether be attached. In the United States, some child restraints also have a top tether. Be sure to read and follow the instructions for your child restraint.

If the child restraint does not have a top tether, one can be obtained, in kit form, for many child restraints. Ask the child restraint manufacturer whether or not a kit is available.



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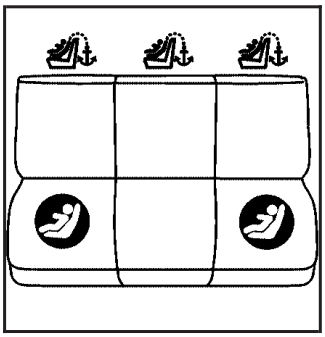
## Lower Anchor and Top Tether Anchor Locations

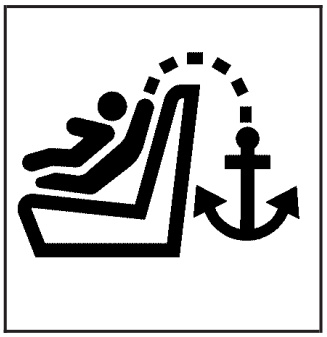


**Second Row**

(Top Tether Anchor): Seating positions with top tether anchors.

(Lower Anchor): Seating positions with two lower anchors.

Each outboard seating position in the second row has exposed metal lower anchors in the crease between the seatback and the seat cushion.



To assist you in locating the top tether anchors, the top tether anchor symbol is located near the top tether anchors.



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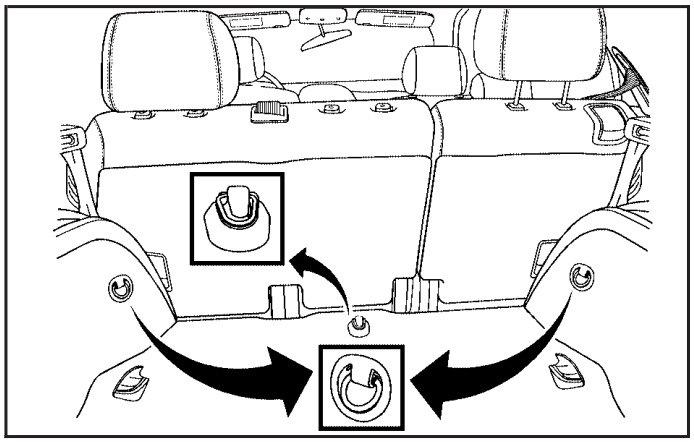

There are two top tether anchors located on the side of the wheel well in the rear cargo area. There is another top tether anchor in the center of the rear cargo area. Be sure to use an anchor located on the same side of the vehicle as the seating position where the child restraint will be placed.

Do not secure a child restraint in the right front passenger's position or any third row position if a national or local law requires that the top tether be attached, or if the instructions that come with the child restraint say that the top tether must be attached. There is no place to attach the top tether in this position.

Accident statistics show that children are safer if they are restrained in the rear rather than the front seat. See *Where to Put the Restraint on page 53* for additional information.



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### Securing a Child Restraint Designed for the LATCH System

**⚠ CAUTION:**

**If a LATCH-type child restraint is not attached to anchors, the restraint will not be able to protect the child correctly. In a crash, the child could be seriously injured or killed. Make sure that a LATCH-type child restraint is properly installed using the anchors, or use the vehicle's safety belts to secure the restraint, following the instructions that came with that restraint, and also the instructions in this manual.**

**⚠ CAUTION:**

**Each top tether anchor and lower anchor in the vehicle is designed to hold only one child restraint. Attaching more than one child restraint to a single anchor could cause the anchor or attachment to come loose or even break during a crash. A child or others could be injured if this happens. To help prevent injury to people and damage to your vehicle, attach only one child restraint per anchor.**



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**⚠ CAUTION:**

**Children can be seriously injured or strangled if a shoulder belt is wrapped around their neck and the safety belt continues to tighten. Secure any unused safety belts behind the child restraint so children cannot reach them. Pull the shoulder belt all the way out of the retractor to set the lock, if your vehicle has one, after the child restraint has been installed. Be sure to follow the instructions of the child restraint manufacturer.**

***Notice:*** **Contact between the child restraint or the LATCH attachment parts and the vehicle's safety belt assembly may cause damage to these parts. Make sure when securing unused safety belts behind the child restraint that there is no contact between the child restraint or the LATCH attachment parts and the vehicle's safety belt assembly.**

**Folding an empty rear seat with the safety belts secured may cause damage to the safety belt or the seat. When removing the child restraint, always remember to return the safety belts to their normal, stowed position before folding the rear seat.**

1. Attach and tighten the lower attachments to the lower anchors. If the child restraint does not have lower attachments or the desired seating position does not have lower anchors, secure the child restraint with the top tether and the safety belts. Refer to your child restraint manufacturer instructions and the instructions in this manual.
   1.1. Find the lower anchors for the desired seating position.
   1.2. Put the child restraint on the seat.
   1.3. Attach and tighten the lower attachments on the child restraint to the lower anchors.



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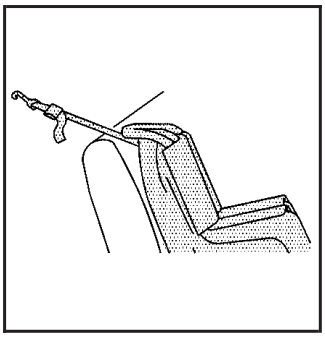
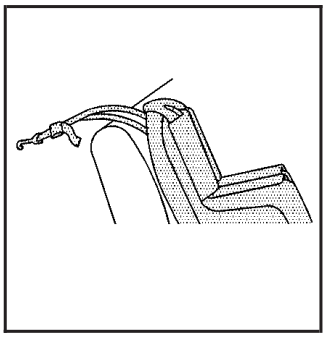
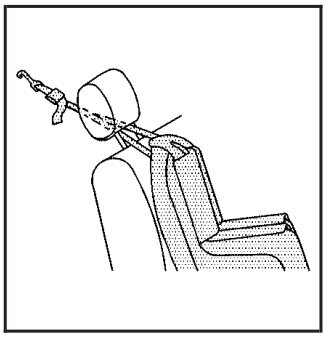
2. If the child restraint manufacturer recommends that the top tether be attached, attach and tighten the top tether to the top tether anchor, if equipped. Refer to the child restraint instructions and the following steps:
   2.1. Find the top tether anchor.
   2.2. If you have an adjustable head restraint, raise the head restraint.
   2.3. Route, attach and tighten the top tether according to your child restraint instructions and the following instructions:



If the position you are using does not have a head restraint and you are using a single tether, route the tether over the seatback.



If the position you are using does not have a head restraint and you are using a dual tether, route the tether over the seatback.



If the position you are using has an adjustable head restraint and you are using a dual tether, route the tether under the head restraint and in between the head restraint posts.



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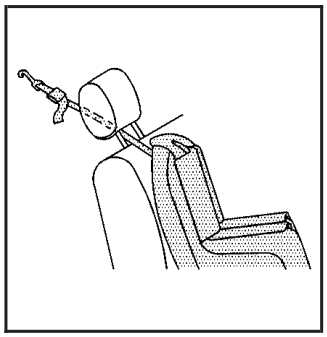

If the position you are using has an adjustable head restraint and you are using a single tether, route the tether under the head restraint and in between the head restraint posts.

3. Push and pull the child restraint in different directions to be sure it is secure.

## Securing a Child Restraint in a Rear Seat Position

If your child restraint has the LATCH system, see *Lower Anchors and Tethers for Children (LATCH) on page 55*.

There are no top tether anchors in the third row seating positions. Do not secure a child restraint in the third row if a national or local law requires that a top tether be anchored or if the instructions that come with the restraint say that the top tether must be anchored.

If your child restraint does not have the LATCH system, you will be using the lap-shoulder belt to secure the child restraint in this position. Be sure to follow the instructions that came with the child restraint. Secure the child in the child restraint when and as the instructions say.



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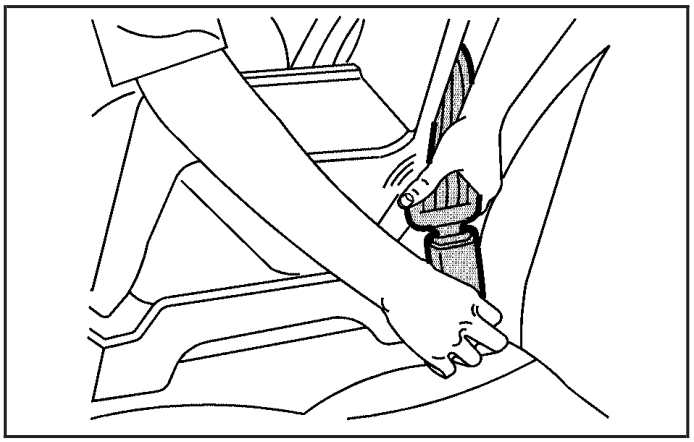
## ⚠ CAUTION:

**In a crash, a child secured in a rear-facing child restraint in the center rear seating position could be injured by the vehicle's armrest. To reduce this risk, the armrest should first be secured with a special armrest retention strap. You can get this from your dealer.**

If you are using a rear-facing child restraint in the second row center position, install the armrest retention strap.

1. Put the child restraint on the seat.
2. Pick up the latch plate, and run the lap and shoulder portions of the vehicle's safety belt through or around the restraint. The child restraint instructions will show you how.



3. Buckle the belt. Make sure the release button is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.



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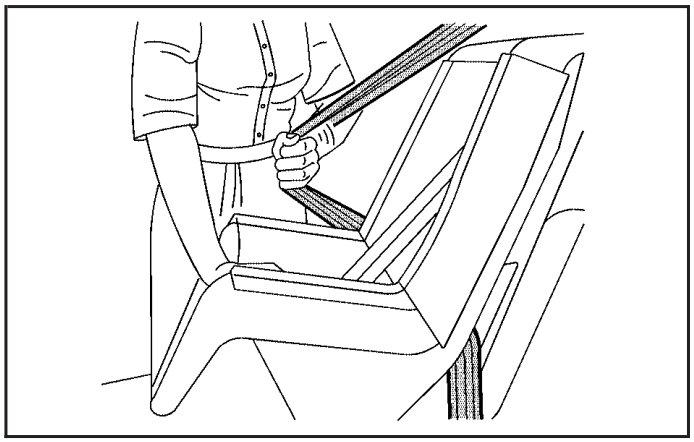
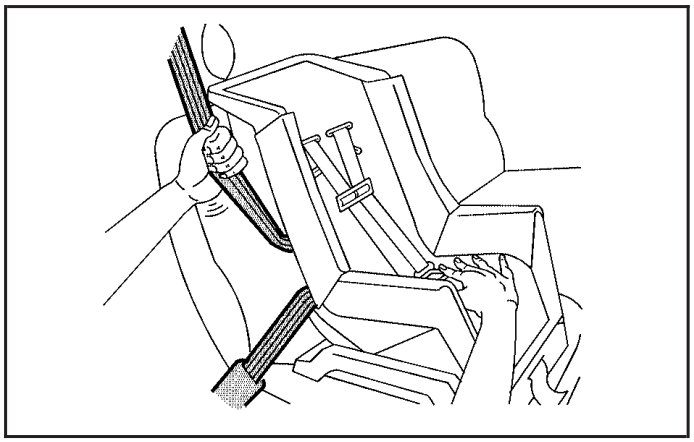


4. Pull the rest of the shoulder belt all the way out of the retractor to set the lock.



5. To tighten the belt, push down on the child restraint, pull the shoulder portion of the belt to tighten the lap portion of the belt and feed the shoulder belt back into the retractor. If you are using a forward-facing child restraint, you may find it helpful to use your knee to push down on the child restraint as you tighten the belt.



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6. If your child restraint has a top tether, and the position that you are using has a top tether anchor, attach and tighten the top tether to the top tether anchor. Refer to the instructions that came with the child restraint and to *Lower Anchors and Tethers for Children (LATCH) on page 55*.
7. Push and pull the child restraint in different directions to be sure it is secure.

To remove the child restraint, just unbuckle the vehicle's safety belt and let it go back all the way. The safety belt will move freely again and be ready to work for an adult or larger child passenger.

## Securing a Child Restraint in the Right Front Seat Position

Your vehicle has a right front passenger airbag. A rear seat is a safer place to secure a forward-facing child restraint. See *Where to Put the Restraint on page 53*.

In addition, your vehicle has a passenger sensing system. The passenger sensing system is designed to turn off the right front passenger's frontal airbag when an infant in a rear-facing infant seat or a small child in a forward-facing child restraint or booster seat is detected. See *Passenger Sensing System on page 81* and *Passenger Airbag Status Indicator on page 202* for more information on this including important safety information.



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A label on your sun visor says, “Never put a rear-facing child seat in the front.” This is because the risk to the rear-facing child is so great, if the airbag deploys.

**⚠ CAUTION:**

**A child in a rear-facing child restraint can be seriously injured or killed if the right front passenger’s airbag inflates. This is because the back of the rear-facing child restraint would be very close to the inflating airbag.**

**Even though the passenger sensing system is designed to turn off the right front passenger’s frontal airbag if the system detects a rear-facing child restraint, no system is fail-safe, and no**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

**one can guarantee that an airbag will not deploy under some unusual circumstance, even though it is turned off. We recommend that rear-facing child restraints be secured in the rear seat, even if the airbag is off.**

**If you need to secure a forward-facing child restraint in the right front seat, always move the front passenger seat as far back as it will go. It is better to secure the child restraint in a rear seat.**



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If you need to secure a forward-facing child restraint in the right front seat position, move the seat as far back as it will go before securing the forward-facing child restraint. See *Manual Seats on page 9* or *Power Seats on page 10*.

If your child restraint has the LATCH system, see *Lower Anchors and Tethers for Children (LATCH) on page 55*.

There is no top tether anchor in the right front passenger's position. Do not secure a child seat in this position if a national or local law requires that the top tether be anchored, or if the instructions that come with the child restraint say that the top tether must be anchored. See *Lower Anchors and Tethers for Children (LATCH) on page 55* if your child restraint has a top tether.

You will be using the lap-shoulder belt to secure the child restraint in this position. Be sure to follow the instructions that came with the child restraint. Secure the child in the child restraint when and as the instructions say.

1. Your vehicle has a right front passenger's frontal airbag. See *Passenger Sensing System on page 81*. We recommend that rear-facing child restraints be secured in a rear seat, even if the airbag is off. If your child restraint is forward-facing, move the seat as far back as it will go before securing the child restraint in this seat. See *Manual Seats on page 9* or *Power Seats on page 10*.

   When the passenger sensing system has turned off the right front passenger's frontal airbag, the off indicator in the passenger airbag status indicator should light and stay lit when you turn the ignition to ON or START. See *Passenger Airbag Status Indicator on page 202*.
2. Put the child restraint on the seat.



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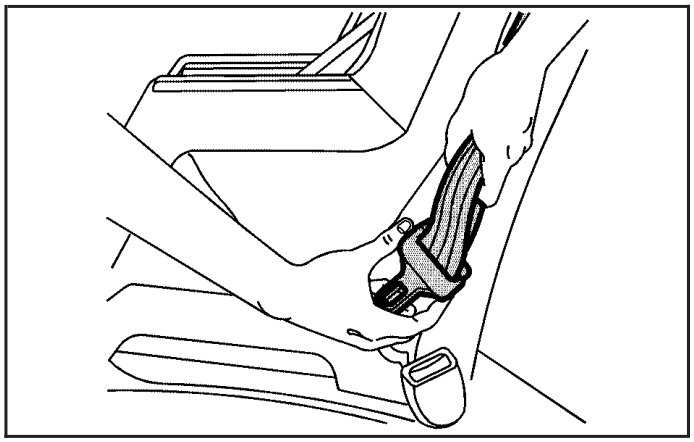
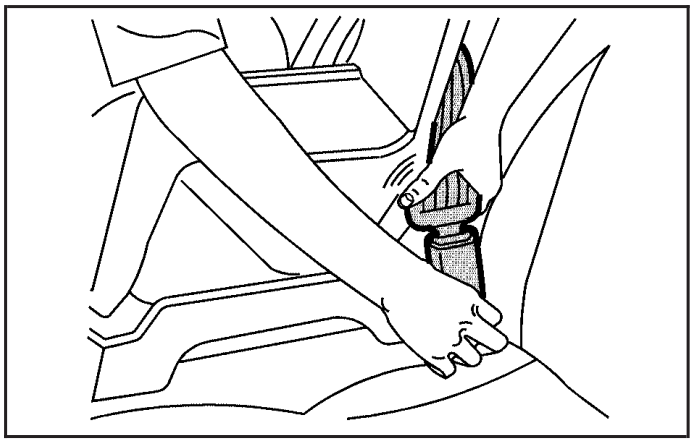
3. Pick up the latch plate, and run the lap and shoulder portions of the vehicle's safety belt through or around the restraint. The child restraint instructions will show you how.



Tilt the latch plate to adjust the belt if needed.



4. Buckle the belt. Make sure the release button is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.



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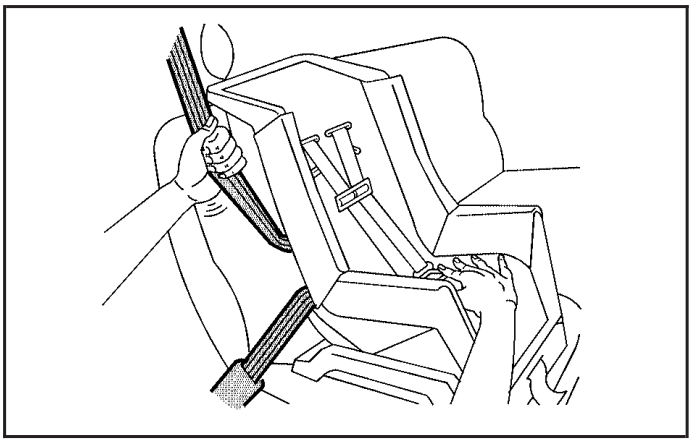

5. To tighten the belt, pull up on the shoulder belt while you push down on the child restraint. You may find it helpful to use your knee to push down on the child restraint as you tighten the belt.
6. Push and pull the child restraint in different directions to be sure it is secure.
7. If the airbag is off, the off indicator in the instrument panel will be lit and stay lit when the key is turned to ON or START.

If a child restraint has been installed and the on indicator is lit, turn the vehicle off. Remove the child restraint from the vehicle and reinstall the child restraint.

If, after reinstalling the child restraint and restarting the vehicle, the on indicator is still lit, check to make sure that the vehicle's seatback is not pressing the child restraint into the seat cushion. If this happens, slightly recline the vehicle's seatback and adjust the seat cushion if possible. Also make sure the child restraint is not trapped under the vehicle head restraint. If this happens, adjust the head restraint.

If the on indicator is still lit, secure the child in the child restraint in a rear seat position in the vehicle and check with your dealer.

To remove the child restraint, unbuckle the vehicle's safety belt and let it go back all the way. The safety belt will move freely again and be ready to work for an adult or larger child passenger.



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## Airbag System

Your vehicle has the following airbags:

- A frontal airbag for the driver.
- A frontal airbag for the right front passenger.
- A seat-mounted side impact airbag for the driver.
- A seat-mounted side impact airbag for the right front passenger.
- A roof-mounted airbag for the driver, right front passenger, and second row outboard passenger positions.

Airbags are designed to supplement the protection provided by safety belts. Even though today's airbags are also designed to help reduce the risk of injury from the force of an inflating bag, all airbags must inflate very quickly to do their job.

Here are the most important things to know about the airbag system:

**⚠ CAUTION:**

**You can be severely injured or killed in a crash if you are not wearing your safety belt — even if you have airbags. Wearing your safety belt during a crash helps reduce your chance of hitting things inside the vehicle or being ejected from it. Airbags are "supplemental restraints" to the safety belts. All airbags are designed to work with safety belts, but do not replace them.**



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**⚠ CAUTION:**

**Frontal airbags for the driver and right front passenger are designed to deploy in moderate to severe frontal and near frontal crashes. They are not designed to inflate in rollover, rear crashes, or in many side crashes. And, for some unrestrained occupants, frontal airbags may provide less protection in frontal crashes than more forceful airbags have provided in the past.**

**Seat-mounted side impact airbags are designed to inflate in moderate to severe crashes where something hits the side of your vehicle. They are not designed to inflate in frontal, in rollover, or in rear crashes.**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

**Roof-mounted side impact airbags are designed to inflate in moderate to severe crashes where something hits the side of your vehicle. They may inflate in some frontal crashes. They are not designed to inflate in rear crashes. The vehicle is designed to deploy the roof-mounted side impact airbags in the event of a vehicle rollover.**

**Everyone in your vehicle should wear a safety belt properly — whether or not there is an airbag for that person.**



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**⚠ CAUTION:**

**Both frontal and side impact airbags inflate with great force, faster than the blink of an eye. If you are too close to an inflating airbag, as you would be if you were leaning forward, it could seriously injure you. Safety belts help keep you in position for airbag inflation before and during a crash. Always wear your safety belt even with frontal airbags. The driver should sit as far back as possible while still maintaining control of the vehicle. Occupants should not lean on or sleep against the door.**

**⚠ CAUTION:**

**Anyone who is up against, or very close to, any airbag when it inflates can be seriously injured or killed. Airbags plus lap-shoulder belts offer the best protection for adults, but not for young children and infants. Neither the vehicle's safety belt system nor its airbag system is designed for them. Young children and infants need the protection that a child restraint system can provide. Always secure children properly in your vehicle. To read how, see *Older Children on page 43* or *Infants and Young Children on page 46*.**



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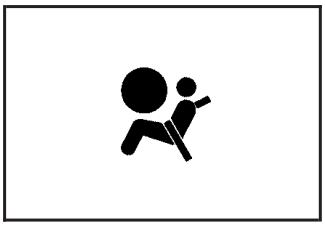

There is an airbag readiness light on the instrument panel cluster, which shows the airbag symbol.

The system checks the airbag electrical system for malfunctions. The light tells you if there is an electrical problem. See *Airbag Readiness Light on page 201* for more information.

## Where Are the Airbags?

The driver's frontal airbag is in the middle of the steering wheel.



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The right front passenger's frontal airbag is in the instrument panel on the passenger's side.

The driver's seat-mounted side impact airbag is in the side of the driver's seatback closest to the door.



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The right front passenger's seat-mounted side impact airbag is in the side of the passenger's seatback closest to the door.

The roof-mounted side impact airbag for the driver and the passenger directly behind the driver is in the ceiling above the side windows.



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The roof-mounted side impact airbag for the front passenger and the passenger directly behind the front passenger is in the ceiling above the side windows.

**⚠ CAUTION:**

**If something is between an occupant and an airbag, the airbag might not inflate properly or it might force the object into that person causing severe injury or even death. The path of an inflating airbag must be kept clear. Do not put anything between an occupant and an airbag, and do not attach or put anything on the steering wheel hub or on or near any other airbag covering. Never secure anything to the roof of your vehicle by routing the rope or tie-down through any door or window opening. If you do, the path of an inflating airbag will be blocked. Do not let seat covers block the inflation path of a side impact airbag. The path of an inflating airbag must be kept clear.**



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## When Should an Airbag Inflate?

The driver's and right front passenger's frontal airbags are designed to inflate in moderate to severe frontal or near-frontal crashes. But they are designed to inflate only if the impact exceeds a predetermined deployment threshold. Deployment thresholds take into account a variety of desired deployment and non-deployment events and are used to predict how severe a crash is likely to be in time for the airbags to inflate and help restrain the occupants. Whether your frontal airbags will or should deploy is not based on how fast your vehicle is traveling. It depends largely on what you hit, the direction of the impact, and how quickly your vehicle slows down.

Your vehicle has a dual-stage driver airbag, which adjusts the restraint according to crash severity using electronic frontal sensor(s), which help the sensing system distinguish between a moderate frontal impact and a more severe frontal impact. The dual-stage driver airbag inflates to a level less than full deployment for moderate frontal impacts and to a full deployment for more severe frontal impacts.

Your vehicle has a dual-depth passenger airbag that adjusts the restraint according to crash severity and seat location using electronic frontal sensor(s) and other special sensors which enable the sensing system to monitor the status of the position of the front passenger seat. The passenger airbag inflates to a reduced depth when the passenger seat is in a forward position. For more rearward front seating positions, the passenger airbag may inflate to an increased depth (a full deployment), based on the crash severity measured early in the event. Always wear your safety belt, even with frontal airbags.

If the front of your vehicle goes straight into a wall that does not move or deform, the threshold level for the reduced deployment is about 12 to 16 mph (19 to 26 km/h), and the threshold level for a full deployment is about 18 to 24 mph (29 to 38.5 km/h). The threshold level can vary, however, with specific vehicle design, so that it can be somewhat above or below this range.



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Frontal airbags may inflate at different crash speeds. For example:

- If the vehicle hits a stationary object, the airbags could inflate at a different crash speed than if the vehicle hits a moving object.
- If the vehicle hits an object that deforms, the airbags could inflate at a different crash speed than if the vehicle hits an object does not deform.
- If the vehicle hits a narrow object (like a pole), the airbags could inflate at a different crash speed than if the vehicle hits a wide object (like a wall).
- If the vehicle goes into an object at an angle, the airbags could inflate at a different crash speed than if the vehicle goes straight into the object.

Frontal airbags (driver and right front passenger) are not intended to inflate during vehicle rollovers, rear impacts, or in many side impacts.

Seat-mounted side impact and roof-mounted airbags are intended to inflate in moderate to severe side crashes. Seat-mounted side impact airbags are not intended to inflate in frontal or near-frontal impacts, rollovers, or rear impacts. In addition, roof-mounted side impact airbags are intended to inflate during a rollover or in a severe frontal impact. Roof-mounted side impact airbags are not intended to inflate in rear impacts. Seat-mounted side impact and roof-mounted airbags will inflate if the crash severity is above the system's designed "threshold level." The threshold level can vary with specific vehicle design. A seat-mounted side impact airbag is intended to deploy on the side of the vehicle that is struck. Both roof-mounted airbags are intended to deploy when either side of the vehicle is struck or during a rollover.

In any particular crash, no one can say whether an airbag should have inflated simply because of the damage to a vehicle or because of what the repair costs were. For frontal airbags, inflation is determined by what the vehicle hits, the angle of the impact, and how quickly the vehicle slows down in frontal and near-frontal impacts. For side impact airbags, inflation is determined by the location and severity of the impact.



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## What Makes an Airbag Inflate?

In an impact of sufficient severity, the airbag sensing system detects that the vehicle is in a crash. In the case of a “rollover capable” roof-mounted side impact airbag, the sensing system detects that the vehicle is about to roll over. The sensing system triggers a release of gas from the inflator, which inflates the airbag. The inflator, airbag and related hardware are all part of the airbag modules inside the steering wheel, instrument panel, the side of the front seatbacks closest to the door and the ceiling of the vehicle, near the side windows.

## How Does an Airbag Restrain?

In moderate to severe frontal or near frontal collisions, even belted occupants can contact the steering wheel or the instrument panel. In moderate to severe side collisions, even belted occupants can contact the inside of the vehicle. Airbags supplement the protection provided by safety belts. Airbags distribute the force of the impact more evenly over the occupant’s upper body, stopping the occupant more gradually. But the frontal airbags would not help you in many types of collisions, including rollovers, rear impacts, and many side impacts, primarily because an occupant’s motion is not toward the airbag. Side impact airbags would not help you in many types of collisions, including many frontal or near frontal collisions, and rear impacts.

Airbags should never be regarded as anything more than a supplement to safety belts, and then only in moderate to severe frontal or near-frontal collisions for the driver’s and right front passenger’s frontal airbags, and only in moderate to severe side collisions for vehicles with side impact airbags.



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## What Will You See After an Airbag Inflates?

After frontal airbags and seat-mounted side impact airbags inflate, they quickly deflate, so quickly that some people may not even realize an airbag inflated. Roof-mounted side impact airbags may still be at least partially inflated minutes after the vehicle comes to rest. Some components of the airbag module — the steering wheel hub for the driver's airbag, the instrument panel for the right front passenger's bag, the side of the seatback closest to the door for the seat-mounted side impact airbags, and the area along the ceiling of your vehicle near the side windows for roof-mounted side impact airbags — may be hot for a short time. The parts of the airbag that come into contact with you may be warm, but not too hot to touch. There may be some smoke and dust coming from the vents in the deflated airbags. Airbag inflation does not prevent the driver from seeing out of the windshield or being able to steer the vehicle, nor does it prevent people from leaving the vehicle.

### ⚠ CAUTION:

**When an airbag inflates, there may be dust in the air. This dust could cause breathing problems for people with a history of asthma or other breathing trouble. To avoid this, everyone in the vehicle should get out as soon as it is safe to do so. If you have breathing problems but cannot get out of the vehicle after an airbag inflates, then get fresh air by opening a window or a door. If you experience breathing problems following an airbag deployment, you should seek medical attention.**

Your vehicle has a feature that may automatically unlock the doors, turn the interior lamps on, and turn the hazard warning flashers on when the airbags inflate. You can lock the doors, turn the interior lamps off, and turn the hazard warning flashers off by using the controls for those features.



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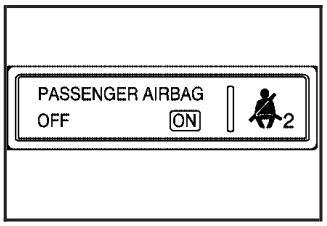
In many crashes severe enough to inflate the airbag, windshields are broken by vehicle deformation. Additional windshield breakage may also occur from the right front passenger airbag.

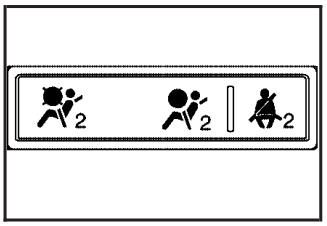
- Airbags are designed to inflate only once. After an airbag inflates, you will need some new parts for the airbag system. If you do not get them, the airbag system will not be there to help protect you in another crash. A new system will include airbag modules and possibly other parts. The service manual for your vehicle covers the need to replace other parts.
- Your vehicle has a crash sensing and diagnostic module which records information after a crash. See *Vehicle Data Collection and Event Data Recorders on page 498*.
- Let only qualified technicians work on the airbag systems. Improper service can mean that an airbag system will not work properly. See your dealer for service.

## Passenger Sensing System

Your vehicle has a passenger sensing system. The passenger airbag status indicator on the instrument panel will be visible when you turn your ignition key to ON or START.




**United States**



**Canada**

The words ON and OFF or the symbol for on and off, will be visible during the system check. When the system check is complete, either the word ON or the word OFF, or the symbol for on or the symbol for off, will be visible. See *Passenger Airbag Status Indicator on page 202*.



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The passenger sensing system will turn off the right front passenger's frontal airbag under certain conditions. The driver's airbags are not part of the passenger sensing system.

The passenger sensing system works with sensors that are part of the right front passenger's seat. The sensors are designed to detect the presence of a properly-seated occupant and determine if the passenger's frontal airbag should be enabled (may inflate) or not.

Accident statistics show that children are safer if they are restrained in the rear rather than the front seat. We recommend that child restraints be secured in a rear seat, including an infant riding in a rear-facing infant seat, a child riding in a forward-facing child seat, and an older child riding in a booster seat.

Your vehicle has a rear seat that will accommodate a rear-facing child restraint. A label on your sun visor says, "Never put a rear-facing child seat in the front." This is because the risk to the rear-facing child is so great, if the airbag deploys.

**⚠ CAUTION:**

**A child in a rear-facing child restraint can be seriously injured or killed if the right front passenger's airbag inflates. This is because the back of the rear-facing child restraint would be very close to the inflating airbag.**

**Even though the passenger sensing system is designed to turn off the passenger's frontal airbag if the system detects a rear-facing child restraint, no system is fail-safe, and no one can**

**CAUTION: (Continued)**



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**CAUTION: (Continued)**

**guarantee that an airbag will not deploy under some unusual circumstance, even though it is turned off. We recommend that rear-facing child restraints be secured in the rear seat, even if the airbag is off.**

**If you need to secure a forward-facing child restraint in the right front seat, always move the front passenger seat as far back as it will go. It is better to secure the child restraint in a rear seat.**

The passenger sensing system is designed to turn off the right front passenger's frontal airbag if:

- The right front passenger seat is unoccupied.
- The system determines that an infant is present in a rear-facing infant seat.
- The system determines that a small child is present in a forward-facing child restraint.
- The system determines that a small child is present in a booster seat.
- A right front passenger takes his/her weight off of the seat for a period of time.
- The right front passenger seat is occupied by a smaller person, such as a child who has outgrown child restraints.
- Or, if there is a critical problem with the airbag system or the passenger sensing system.



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When the passenger sensing system has turned off the right front passenger's frontal airbag, the off indicator will light and stay lit to remind you that the airbag is off.

If a child restraint has been installed and the on indicator is lit, turn the vehicle off. Remove the child restraint from the vehicle and reinstall the child restraint following the child restraint manufacturer's directions and refer to *Securing a Child Restraint in the Right Front Seat Position on page 65*.

If, after reinstalling the child restraint and restarting the vehicle, the on indicator is still lit, check to make sure that the vehicle's seatback is not pressing the child restraint into the seat cushion. If this happens, slightly recline the vehicle's seatback and adjust the seat cushion if possible. Also make sure the child restraint is not trapped under the vehicle head restraint. If this happens, adjust the head restraint.

If the on indicator is still lit, secure the child in the child restraint in a rear seat position in the vehicle and check with your dealer.

The passenger sensing system is designed to enable (may inflate) the right front passenger's frontal airbag anytime the system senses that a person of adult size is sitting properly in the right front passenger's seat. When the passenger sensing system has allowed the airbag to be enabled, the on indicator will light and stay lit to remind you that the airbag is active.

For some children who have outgrown child restraints and for very small adults, the passenger sensing system may or may not turn off the right front passenger's frontal airbag, depending upon the person's seating posture and body build. Everyone in your vehicle who has outgrown child restraints should wear a safety belt properly — whether or not there is an airbag for that person.

If a person of adult-size is sitting in the right front passenger's seat, but the off indicator is lit, it could be because that person is not sitting properly in the seat. If this happens, turn the vehicle off and ask the person to place the seatback in the fully upright position, then sit upright in the seat, centered on the seat cushion, with the person's legs comfortably extended.



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Restart the vehicle and have the person remain in this position for about two minutes. This will allow the system to detect that person and then enable the passenger's airbag.

**⚠ CAUTION:**

**If the airbag readiness light in the instrument panel cluster ever comes on and stays on, it means that something may be wrong with the airbag system. If this ever happens, have the vehicle serviced promptly, because an adult-size person sitting in the right front passenger's seat may not have the protection of the frontal airbag. See *Airbag Readiness Light on page 201* for more on this, including important safety information.**



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A thick layer of additional material, such as a blanket, or aftermarket equipment such as seat covers, seat heaters, and seat massagers, can affect how well the passenger sensing system operates. Remove any additional material from the seat cushion before reinstalling or securing the child restraint and before a small occupant, including a small adult, sits in the right front passenger's seat. You may want to consider not using seat covers or other aftermarket equipment.

See *Adding Equipment to Your Airbag-Equipped Vehicle on page 88* for more information about modifications that can affect how the system operates.

**⚠ CAUTION:**

**Stowing of articles under the passenger's seat or between the passenger's seat cushion and seatback may interfere with the proper operation of the passenger sensing system.**



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## Servicing Your Airbag-Equipped Vehicle

Airbags affect how your vehicle should be serviced. There are parts of the airbag system in several places around your vehicle. You do not want the system to inflate while someone is working on your vehicle. Your dealer and the service manual have information about servicing your vehicle and the airbag system. To purchase a service manual, see *Service Publications Ordering Information on page 505*.

**⚠ CAUTION:**

**For up to 10 seconds, after the ignition is turned off and the battery is disconnected, an airbag can still inflate during improper service. You can be injured if you are close to an airbag when it inflates. Avoid yellow connectors. They are probably part of the airbag system. Be sure to follow proper service procedures, and make sure the person performing work for you is qualified to do so.**

The airbag system does not need regular maintenance.



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## Adding Equipment to Your Airbag-Equipped Vehicle

**Q: Is there anything I might add to the front or sides of the vehicle that could keep the airbags from working properly?**

**A:** Yes. If you add things that change your vehicle's frame, bumper system, height, front end or side sheet metal, they may keep the airbag system from working properly. Also, the airbag system may not work properly if you relocate any of the airbag sensors. If you have any questions about this, you should contact Customer Assistance before you modify your vehicle. The phone numbers and addresses for Customer Assistance are in Step Two of the Customer Satisfaction Procedure in this manual. See *Customer Satisfaction Procedure on page 488*.

**Q: Because I have a disability, I have to get my vehicle modified. How can I find out whether this will affect my airbag system?**

**A:** Changing or moving any parts of the front seats, safety belts, the airbag sensing and diagnostic module, steering wheel, instrument panel, ceiling headliner, ceiling and pillar garnish trim, roof-mounted airbag modules, or airbag wiring can affect the operation of the airbag system. If you have questions, call Customer Assistance. The phone numbers and addresses for Customer Assistance are in Step Two of the Customer Satisfaction Procedure in this manual. See *Customer Satisfaction Procedure on page 488*.



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# Restraint System Check

## Checking the Restraint Systems

Now and then, make sure the safety belt reminder light and all your belts, buckles, latch plates, retractors and anchorages are working properly. Look for any other loose or damaged safety belt system parts. If you see anything that might keep a safety belt system from doing its job, have it repaired. Keep safety belts clean and dry. See *Care of Safety Belts on page 447* for more information.

Torn or frayed safety belts may not protect you in a crash. They can rip apart under impact forces. If a belt is torn or frayed, get a new one right away.

Also look for any opened or broken airbag covers, and have them repaired or replaced. The airbag system does not need regular maintenance.

***Notice:*** **If you damage the covering for the driver's or the right front passenger's airbag, or the airbag covering on the driver's and right front passenger's seatback, or the side impact airbag covering on the ceiling near the side windows, the bag may not work properly. You may have to replace the airbag module in the steering wheel, both the airbag module and the instrument panel for the right front passenger's airbag, the airbag module and seatback for the driver's and right front passenger's seat-mounted side impact airbags, or side impact airbag module and ceiling covering for the roof-mounted side impact airbag. Do not open or break the airbag coverings.**



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## Replacing Restraint System Parts After a Crash

### ⚠ CAUTION:

**A crash can damage the restraint systems in your vehicle. A damaged restraint system may not properly protect the person using it, resulting in serious injury or even death in a crash. To help make sure your restraint systems are working properly after a crash, have them inspected and any necessary replacements made as soon as possible.**

If you have had a crash, do you need new belts or LATCH system parts?

After a very minor collision, nothing may be necessary. But if the belts were stretched, as they would be if worn during a more severe crash, then you need new parts.

If the LATCH system was being used during a more severe crash, you may need new LATCH system parts.

If belts are cut or damaged, replace them. Collision damage also may mean you will need to have LATCH system, safety belt, or seat parts repaired or replaced. New parts and repairs may be necessary even if the belt or LATCH system was not being used at the time of the collision.

If an airbag inflates, you will need to replace airbag system parts. See the part on the airbag system earlier in this section.

If the frontal or side impact airbags inflate, you will also need to replace the driver's and right front passenger's safety belt buckle assembly. Be sure to do so. Then the new buckle assembly will be there to help protect you in a collision.

After a crash, you may need to replace the driver and front passenger's safety belt buckle assemblies, even if the airbags have not deployed. The driver and front passenger's safety belt buckle assemblies contain the safety belt pretensioners. Have your safety belt pretensioners checked if your vehicle has been in a collision, or if your airbag readiness light stays on after you start your vehicle or while you are driving. See *Airbag Readiness Light on page 201*.



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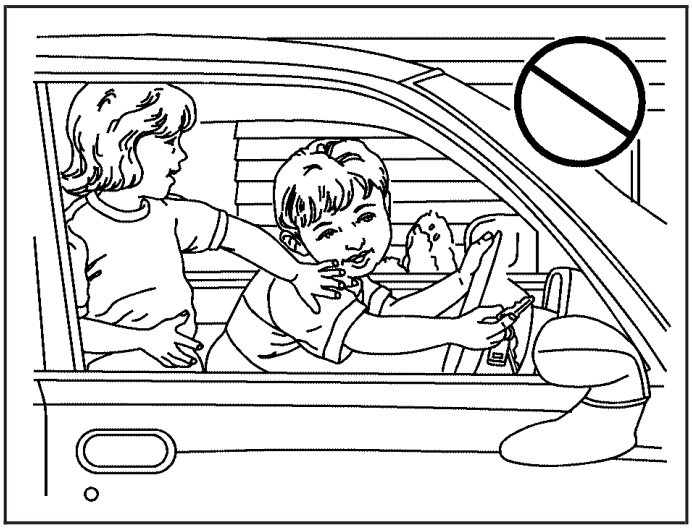
## Keys

**⚠ CAUTION:**

**Leaving children in a vehicle with the ignition key is dangerous for many reasons, children or others could be badly injured or even killed. They could operate the power windows or other controls or even make the vehicle move. The windows will function with the keys in the ignition and they could be seriously injured or killed if caught in the path of a closing window. Do not leave the keys in a vehicle with children.**





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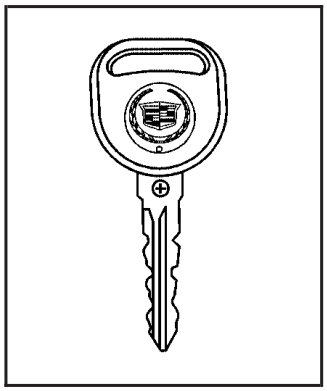

Your vehicle has a double-sided key that can be used for the ignition and door locks.

If you ever lose your keys, your dealer will be able to assist you with obtaining replacements.

In an emergency contact Cadillac Roadside Service®. See *Roadside Service on page 493* for more information.

## Remote Keyless Entry (RKE) System

Your Remote Keyless Entry (RKE) system operates on a radio frequency subject to Federal Communications Commission (FCC) Rules and with Industry Canada.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference received, including interference that may cause undesired operation of the device.



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This device complies with RSS-210 of Industry Canada. Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

Changes or modifications to this system by other than an authorized service facility could void authorization to use this equipment.

At times you may notice a decrease in operating range. This is normal for any RKE system. If the transmitter does not work or if you have to stand closer to your vehicle for the transmitter to work, try this:

- Check the distance. You may be too far from your vehicle. You may need to stand closer during rainy or snowy weather.
- Check the location. Other vehicles or objects may be blocking the signal. Take a few steps to the left or right, hold the transmitter higher, and try again.
- Check to determine if battery replacement is necessary. See “Battery Replacement” under *Remote Keyless Entry (RKE) System Operation on page 96*.
- If you are still having trouble, see your dealer or a qualified technician for service.



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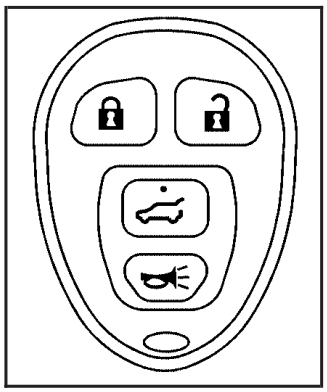
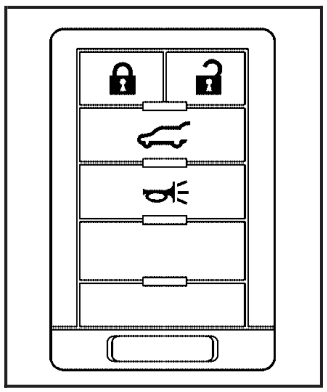
## Remote Keyless Entry (RKE) System Operation

With this feature, you can lock and unlock the doors and liftgate, open and close the liftgate, and turn on your vehicle's interior lamps from up to 65 feet (20 m) away using the Remote Keyless Entry (RKE) transmitter supplied with your vehicle.

You will have one of the RKE transmitters below.





**(Lock):** Press this symbol on the RKE transmitter to lock the doors. This also arms the theft-deterrent system. See *Theft-Deterrent System on page 112* for additional information.

You can program your vehicle so that the exterior lamps will flash and/or the horn will sound when you lock the doors with the RKE transmitter. See *DIC Vehicle Customization on page 231* for more information on programming this feature.

**(Unlock):** Press this symbol on the RKE transmitter to unlock the driver's door. This also disarms the theft-deterrent system. Press the button again, within five seconds, to unlock the rest of the doors.

You can program your vehicle so that the exterior lamps will flash when you unlock the doors with the RKE transmitter. See *DIC Vehicle Customization on page 231* for more information on programming this feature.

If your vehicle is programmed for remote confirmation, the doors must be closed for this feature to work. If a door is open, remote confirmation will be canceled.



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**(Panic Alarm):** Press and release this button to locate your vehicle. The turn signal lamps will flash and the horn will sound three times. Press and hold this button for more than two seconds to activate the panic alarm. The turn signal lamps will flash and the horn will sound repeatedly for 30 seconds. The alarm will turn off when the ignition is turned to ON or the alarm button is pressed again. The ignition must be in OFF for the panic alarm to work.

**(Power Liftgate):** Press and hold this button on the RKE transmitter to open and close the liftgate. The taillamps will flash and a chime will sound to indicate when the liftgate is opening and closing.

## Matching Transmitter(s) to Your Vehicle

Each RKE transmitter is coded to prevent another transmitter from unlocking your vehicle. If a transmitter is lost or stolen, a replacement can be purchased through your dealer. Remember to bring any additional transmitters with you so that all of them can be re-coded to match the new transmitter. Once your dealer has coded the new transmitter, the lost transmitter will not unlock your vehicle. Each vehicle can have a maximum of eight transmitters matched to it.

## Battery Replacement

Under normal use, the battery in your RKE transmitter should last about four years.

The battery is weak if the transmitter will not work at the normal range in any location. If you have to get close to your vehicle before the transmitter works, it is probably time to change the battery.

***Notice:*** **When replacing the battery, use care not to touch any of the circuitry. Static from your body transferred to these surfaces may damage the transmitter.**



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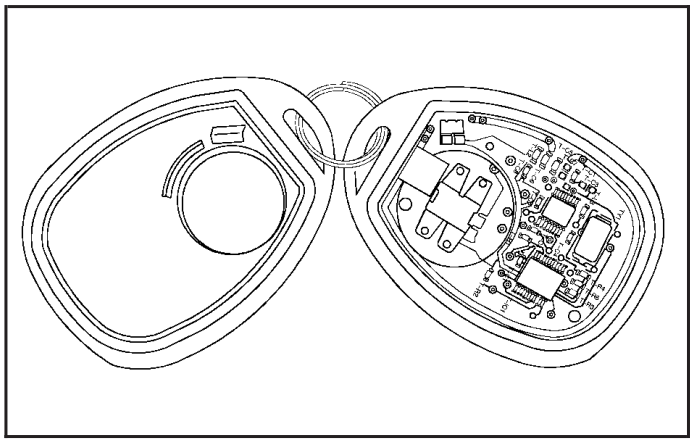

To replace the battery in the RKE transmitter do the following:

1. Use a flat object with a thin edge into the notch, located below the trunk release button, and separate the bottom half from the top half of the transmitter.
2. Remove the old battery, but do not use a metal object to do this.
3. Slide the new battery into the transmitter with the positive side of the battery facing down. Use a type CR2032 battery, or equivalent type. Make sure the cover is on tightly, so water will not get in.
4. Snap the front and the back of the transmitter together.
5. Test the operation of the transmitter with the vehicle.



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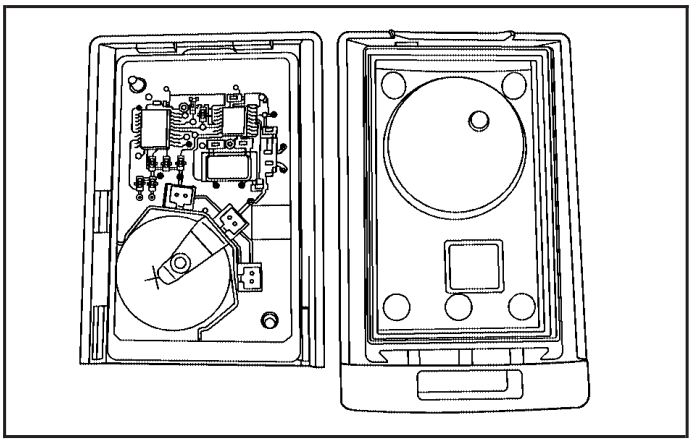

To replace the battery in the RKE transmitter do the following:

1. Use a flat object with a thin edge into the notch, located above the metal base, and separate the bottom half from the top half of the transmitter.
2. Remove the old battery, but do not use a metal object to do this.
3. Slide the new battery into the transmitter with the positive side of the battery facing up. Use a type CR2032 battery, or equivalent type. Make sure the cover is on tightly, so water will not get in.
4. Snap the front and the back of the transmitter together.
5. Test the operation of the transmitter with the vehicle.



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# Doors and Locks

## Door Locks

**⚠ CAUTION:**

**Unlocked doors can be dangerous.**

- **Passengers, especially children, can easily open the doors and fall out of a moving vehicle. When a door is locked, the handle will not open it. You increase the chance of being thrown out of the vehicle in a crash if the doors are not locked. So, wear safety belts properly and lock the doors whenever you drive.**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

- **Young children who get into unlocked vehicles may be unable to get out. A child can be overcome by extreme heat and can suffer permanent injuries or even death from heat stroke. Always lock your vehicle whenever you leave it.**
- **Outsiders can easily enter through an unlocked door when you slow down or stop your vehicle. Locking your doors can help prevent this from happening.**



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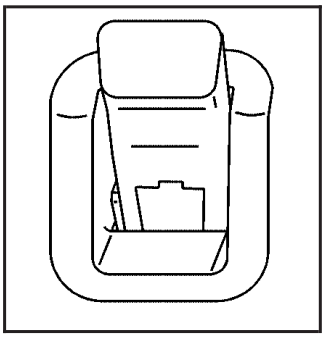
There are several ways to lock and unlock your vehicle.

Because your vehicle has the theft-deterrent system, you must unlock the doors from the outside with the key or Remote Keyless Entry (RKE) transmitter to avoid setting off the alarm. If the windows are down and the doors are locked, do not reach in to manually unlock the vehicle because you will set off the alarm.



From the inside, use the manual lock levers located on the door panels near the windows.

Push down on the manual lock lever to lock the door. To unlock the door, pull up on the lever.

## Central Door Unlocking System

Your vehicle has a central door unlocking feature. When unlocking the driver's door, you can unlock the other doors by holding the key in the turned position for a few seconds or by quickly turning the key twice in the lock cylinder.

## Power Door Locks

The power door lock switches are located on the armrest on the front doors.

**(Unlock):** Press the side of the switch with the unlock symbol to unlock the doors.

**(Lock):** Press the side of the switch with the lock symbol to lock the doors.



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## Delayed Locking

With this feature, you can delay the actual locking of the doors.

When the power door lock switch or the lock button on the remote keyless entry transmitter is pressed when the key is not in the ignition and the driver's door is opened, a chime will sound three times indicating that delayed locking is active.

When all the doors are closed, the doors will lock automatically after five seconds. If a door is reopened before five seconds have elapsed, the five second timer will reset itself once all the doors are closed again.

You can press the door lock switch or the lock button on the remote keyless entry transmitter again to override this feature and lock the doors immediately.

You can turn this feature off using the Driver Information Center (DIC). When delayed locking is off, the doors will lock immediately when you press the power door lock switch or the lock button on the remote keyless entry transmitter. See *DIC Vehicle Customization on page 231* for more information.

## Programmable Automatic Door Locks

Your vehicle is programmed so that when the doors are closed, the ignition is on and the shift lever is moved out of PARK (P), all the doors will lock. The front door inside handles will remain active. The doors will unlock every time you stop the vehicle and move the shift lever back into PARK (P).

If someone needs to exit the vehicle once the doors are locked, have that person use the manual lever or power door lock switch for the rear doors. The front doors will remain unlocked from inside the vehicle. When the door is closed again, it will not lock automatically. Use the manual lever or the power door lock switch to lock the door.

The power door locks can be programmed through prompts displayed on the Driver Information Center (DIC). These prompts allow you to choose various lock and unlock settings. For more information on programming, see *DIC Vehicle Customization on page 231*.



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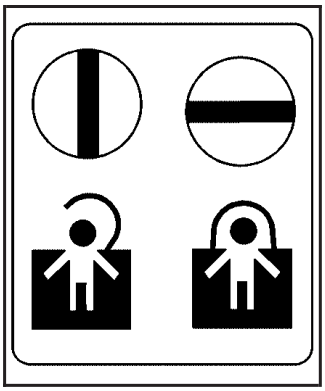
## Rear Door Security Locks

Your vehicle has rear door security locks that prevent passengers from opening the rear doors on your vehicle from the inside.



The rear door security locks are located on the inside edge of each rear door. You must open the rear doors to access them.

To use these locks, do the following:

1. Insert your key into the slot next to the rear door security lock label and turn it to engage the lock.
2. Close the door.
3. Repeat the steps for the other rear door.

The rear doors on your vehicle cannot be opened from the inside when this feature is in use.

When you want to open a rear door when the security lock is on, do the following:

1. Unlock the door using the Remote Keyless Entry (RKE) transmitter, the front door power lock switch or by lifting the rear door manual lock.
2. Then open the door from the outside.

To cancel the rear door security lock, do the following:

1. Unlock the door and open it from the outside.
2. Insert your key into the slot next to the rear door security lock label and turn it to disengage the lock.
3. Repeat the steps for the other lock.

The rear door locks will now work normally.



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## Lockout Protection

If you press the power door lock switch when the key is in the ignition and any door is open, all the doors will lock and only the driver's door will unlock. If you close the doors, you can lock them using the remote keyless entry transmitter. Be sure to remove the key from the ignition when locking your vehicle.

This feature can be overridden by pressing the lock button on the remote keyless entry transmitter or by pressing the power lock switch a second time.

## Power Liftgate

### Power Liftgate Operation

Your vehicle has a power liftgate. The vehicle must be in PARK (P) to power open or close the liftgate.

The liftgate must be completely closed to power open or the liftgate must be completely open to power close.

The taillamps will flash and a chime will sound at the beginning of each power operation cycle.

**⚠ CAUTION:**

**You or others could be injured if caught in the path of the power liftgate. Make sure there is no one in the way of the liftgate as it is opening and closing.**



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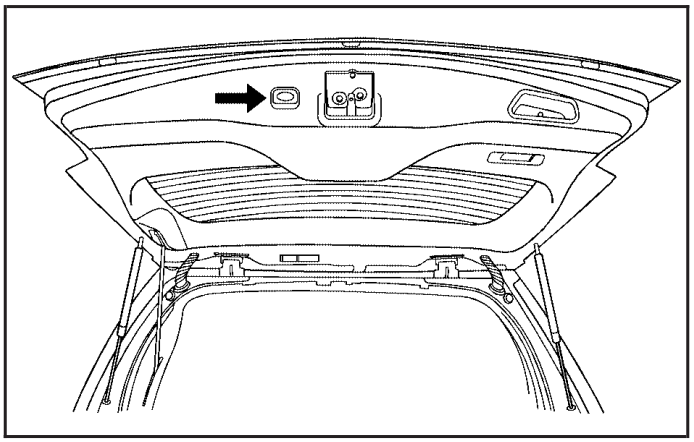
***Notice:*** **If you open the liftgate without checking for overhead obstructions such as a garage door, you could break the liftgate or the liftgate glass. Always check to make sure the area above the liftgate is clear before opening it.**

To open and close the liftgate, press and hold the power liftgate button on the remote keyless entry transmitter (RKE) until the liftgate starts moving. Press the RKE button a second time during liftgate operations to reverse that operation. See *Remote Keyless Entry (RKE) System Operation on page 96* for more information.



The liftgate can also be power closed by pressing the power liftgate button next to the liftgate latch. Press the button a second time during liftgate operation to reverse that operation. The power liftgate may be temporarily disabled under extreme temperatures or low battery condition. If this occurs, the liftgate can still be operated manually.



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If you shift the transmission out of PARK (P) while the power function is in progress, the liftgate power function will continue to completion. If you shift the transmission out of PARK (P) and accelerate before the power liftgate latches closed, the liftgate may reverse to the open position. Cargo could fall out of the vehicle. Always make sure the power liftgate is closed and latched before you drive away.

If you power open the liftgate and the liftgate support struts have lost pressure, the lights will flash and a chime will sound. The liftgate will hold open temporarily, then slowly close. See your dealer for service before using the liftgate.

### Obstacle Detection Features

If the liftgate encounters an obstacle during a power open or close cycle, a warning chime will sound and the liftgate will automatically reverse direction to the fully closed or open position. After removing the obstruction, the liftgate may be power opened or closed normally.

If the liftgate encounters multiple obstacles on the same power cycle, the power function will deactivate, and the liftgate will switch to manual operation. The REAR ACCESS OPEN warning message in the Driver Information Center (DIC) will indicate that the liftgate is open. After removing the obstructions, manually open the liftgate to the fully open position or close the liftgate to the fully closed and latched position. The liftgate will now resume normal power operation.

Your vehicle has an obstacle detection sensor located on the rear edge of the rear quarter panel windows. If an object is caught between the liftgate and the window and presses against this sensor, the liftgate will reverse direction and open fully. The liftgate will remain open until it is activated again or closed manually.



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## Manual Liftgate Operation

With the doors unlocked, the power liftgate can always be manually opened and closed.

To open the liftgate, pull up on the handle on the outside of the liftgate. To close the liftgate, use the pull cup to lower the liftgate and close. The liftgate latch will power cinch to closed position. Do not force the liftgate during a power cycle.

Always close the liftgate before driving.

**⚠ CAUTION:**

**It can be dangerous to drive with the liftgate open because carbon monoxide (CO) gas can come into your vehicle. You can not see or smell CO. It can cause unconsciousness and even death. If you must drive with the liftgate open or if electrical wiring or other cable connections must pass through the seal between the body and the liftgate:**

- **Make sure all other windows are shut.**
- **Turn the fan on your heating or cooling system to its highest speed and select the control setting that will force outside air into your vehicle. See *Dual Climate Control System on page 189*.**
- **If you have air outlets on or under the instrument panel, open them all the way. See *Engine Exhaust on page 132*.**



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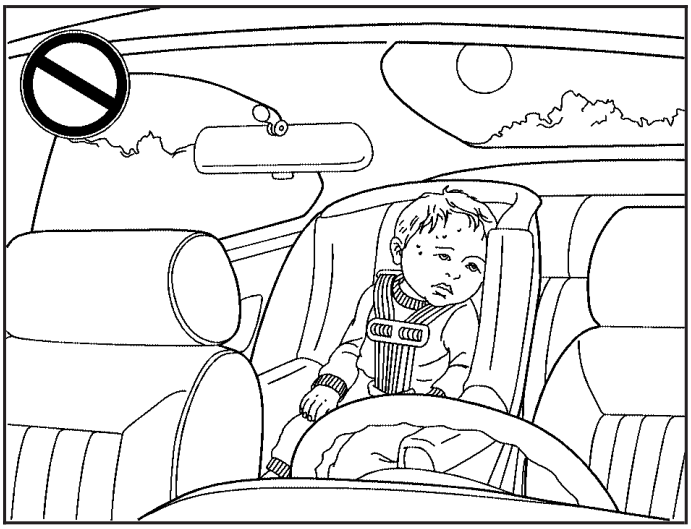
## Windows

**⚠ CAUTION:**

**Leaving children, helpless adults, or pets in a vehicle with the windows closed is dangerous. They can be overcome by the extreme heat and suffer permanent injuries or even death from heat stroke. Never leave a child, a helpless adult, or a pet alone in a vehicle, especially with the windows closed in warm or hot weather.**





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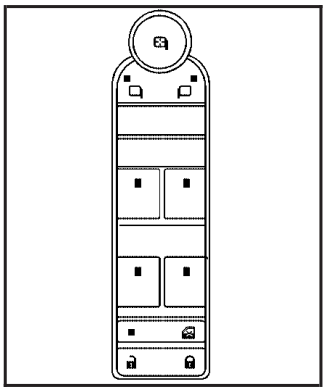
## Power Windows

### ⚠ CAUTION:

**Leaving children, helpless adults, or pets in a vehicle with the windows closed is dangerous. They can be overcome from extreme heat in warm or hot weather and suffer permanent injuries or even death from heat stroke.**

**Leaving children in a vehicle with the ignition key is dangerous for many reasons, children or others could be badly injured or even killed. They could operate the power windows or other controls or even make the vehicle move. The windows will function with the keys in the ignition and they could be seriously injured or killed if caught in the path of a closing window. Do not leave keys in a vehicle with children.**

**When there are children in the rear seat use the window lockout button to prevent unintentional operation of the windows.**



The power window switches are located on the armrest near each window.

Press the switch to the first position to lower the window to the desired level. Pull the switch up to raise the window.

Your vehicle has Retained Accessory Power (RAP) that allows you to use the power windows once the ignition has been turned off. For more information, see *Retained Accessory Power (RAP) on page 118*.



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## Express-Down Window

This feature is on all windows. Press the switch to the second position and release the switch to activate the express-down feature. To stop the window as it is lowering, press down or pull up briefly on the switch again.

## Express-Up Window

This feature is on all windows. Pull the switch up to the second position and release the switch to activate the express-up feature. To stop the window as it is raising, pull up or press down briefly on the switch again.

## Programming the Power Windows

If the battery on your vehicle has been recharged, disconnected, or is not working, you will need to reprogram each power window for the express-up feature to work. Before reprogramming, you will need to replace or recharge your vehicle's battery.

To program each window, follow these steps:

1. With the ignition in ACCESSORY, ON, or when Retained Accessory Power (RAP) is active, close all doors.
2. Press and hold the power window switch until the window is fully open.
3. Pull the power window switch up until the window is fully closed.
4. Continue pulling the switch up for approximately two seconds after the window is completely closed.

The window is now reprogrammed. Repeat the process for the other windows.

## Express Window Anti-Pinch Feature

If any object is in the path of the window when the express-up is active, the window will stop at the obstruction and auto-reverse to a preset factory position. Weather conditions such as severe icing may also cause the window to auto-reverse. The window will return to normal operation once the obstruction or condition is removed.



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## Express Window Anti-Pinch Override

### ⚠ CAUTION:

**If express override is activated, the window will not reverse automatically. You or others could be injured and the window could be damaged. Before you use express override, make sure that all people and obstructions are clear of the window path.**

In an emergency, the anti-pinch feature can be overridden in a supervised mode. Pull the window switch all the way up to the second position. The window will rise for as long as the switch is held. Once the switch is released, the express mode is re-activated.

In this mode, the window can still close on an object in its path. Use care when using the override mode.

## Window Lockout

**(Window Lockout):** The rear window lockout button is located on the driver's door armrest near the window switches.

Press the right side of the button to disable the rear window controls. The light on the button will illuminate, indicating the feature is in use. The rear windows still can be raised or lowered using the driver's window switches when the lockout feature is active.

To restore power to the rear windows, press the button again. The light on the button will go out.



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## Sun Visors

Swing down the primary visor to block out glare. It can also be detached from the center mount and moved to the side to block glare from that direction.

The driver's sunshade may also have buttons for a built-in garage door opener. See *Universal Home Remote System (With Three Round LED) on page 143* or *Universal Home Remote System (With One Triangular LED) on page 143* for more information.

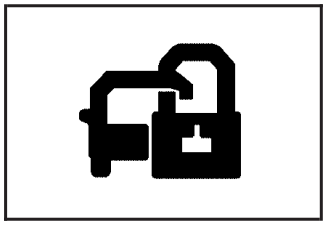
### Lighted Visor Vanity Mirror

Pull the visor down and lift the cover. The light will automatically come on. The light will go out when you close the cover.

# Theft-Deterrent Systems

Vehicle theft is big business, especially in some cities. Although your vehicle has a number of theft-deterrent features, we know that nothing we put on it can make it impossible to steal.

## Theft-Deterrent System



The security light is located on the instrument panel cluster.

If the ignition is off and a door is open, the security light will flash, reminding you to arm the theft-deterrent system.

To arm the system, do the following:

1. Lock the door using the Remote Keyless Entry (RKE) transmitter or the power door lock switch.
2. Close all the doors. The security light will illuminate. It should go off within approximately 30 seconds.

If a door or a liftgate is opened without a key or a RKE transmitter, the horn will sound and the lamps will flash for up to 30 seconds.



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The theft-deterrent system will not arm if you lock the doors with a key, use the manual door lock or if the liftgate is ajar. It activates only if you use the RKE transmitter or the power door lock.

To avoid activating the alarm by accident do the following:

- The vehicle should be locked with the door key or the manual door lock after the doors are closed if you don't want to arm the theft-deterrent system.
- Always unlock a door with a key or use the RKE transmitter. Pressing the unlock button on the RKE transmitter disarms the theft-deterrent system. Unlocking a door any other way while the system is armed will activate the alarm when a door or the liftgate is opened.

If you activate the alarm by accident, unlock the driver's door with your key. You can also turn off the alarm by using the unlock button on the RKE transmitter, or by starting the vehicle with a valid key.

## Testing the Alarm

1. From inside the vehicle, roll down the window, then get out of the vehicle, keeping the door open.
2. From outside of the vehicle, with the door open, lock the vehicle using the power door lock switch or the RKE transmitter and close the door. Wait approximately 30 seconds until the security light goes off.
3. Reach in and unlock the door using the manual lock and open the door. The horn will sound and the exterior lamps will flash.

You can turn off the alarm by unlocking the driver's door with your key, using the unlock button on the RKE transmitter or by starting the car with a valid key.

If the alarm does not sound when it should, check to see if the horn works. The horn fuse may be blown. To replace the fuse, see *Fuses and Circuit Breakers on page 455*. If the fuse does not need to be replaced, you may need to have your vehicle serviced.

To reduce the possibility of theft, always arm the theft-deterrent system when leaving your vehicle.



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## PASS-Key® III+

The PASS-Key® III+ system operates on a radio frequency subject to Federal Communications Commission (FCC) Rules and with Industry Canada.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

This device complies with RSS-210 of Industry Canada. Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

Changes or modifications to this system by other than an authorized service facility could void authorization to use this equipment.

PASS-Key® III+ uses a radio frequency transponder in the key that matches a decoder in your vehicle.

## PASS-Key® III+ Operation

Your vehicle has PASS-Key® III+ (Personalized Automotive Security System) theft-deterrent system. PASS-Key® III+ is a passive theft-deterrent system. This means you do not have to do anything special to arm or disarm the system. It works when you transition the key to ON, ACCESSORY or START from the OFF position.

When the PASS-Key® III+ system senses that someone is using the wrong key, it prevents the vehicle from starting. Anyone using a trial-and-error method to start the vehicle will be discouraged because of the high number of electrical key codes.

If the engine does not start and the security light on the instrument panel cluster comes on when trying to start the vehicle, the key may have a damaged transponder. Turn the ignition off and try again.



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If the engine still does not start, and the key appears to be undamaged, try another ignition key. At this time, you may also want to check the fuse, see *Fuses and Circuit Breakers on page 455*. If the engine still does not start with the other key, your vehicle needs service. If your vehicle does start, the first key may be faulty. See your dealer who can service the PASS-Key® III+ to have a new key made. In an emergency, contact Roadside Assistance.

It is possible for the PASS-Key® III+ decoder to learn the transponder value of a new or replacement key. Up to nine additional keys may be programmed for the vehicle. The following procedure is for programming additional keys only. If all the currently programmed keys are lost or do not operate, you must see your dealer or a locksmith who can service PASS-Key® III+ to have keys made and programmed to the system.

See your dealer or a locksmith who can service PASS-Key® III+ to get a new key blank that is cut exactly as the ignition key that operates the system.

To program the new additional key do the following:

1. Verify that the new key has a ⊕ stamped on it.
2. Insert the original, already programmed, key in the ignition and start the engine. If the engine will not start, see your dealer for service.
3. After the engine has started, turn the key to OFF, and remove the key.
4. Insert the new key to be programmed and turn it to the ON position within five seconds of the original key being turned to the OFF position.
5. The security light will turn off once the key has been programmed.
6. Repeat Steps 1 through 5 if additional keys are to be programmed.

If you are driving and the security light comes on and stays on, you may be able to restart your engine. Your PASS-Key® III+ system, however, may not be working properly and must be serviced by your dealer.

If you lose or damage your PASS-Key® III+ key, see your dealer or a locksmith who can service PASS-Key® III+ to have a new key made.



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# Starting and Operating Your Vehicle

## New Vehicle Break-In

***Notice:*** **Your vehicle does not need an elaborate break-in. But it will perform better in the long run if you follow these guidelines for the first 500 miles (805 km):**

- **Do not drive at any one constant speed, fast or slow.**
- **Do not exceed 70 mph (113 km/h).**
- **Do not make full-throttle starts; also refrain from using the full throttle while driving. Avoid downshifting to brake, or slow, the vehicle.**

**If these procedures are not followed, your engine, axle, or other parts could be damaged.**

**Avoid making hard stops for the first 200 miles (322 km) or so. During this time your new brake linings are not yet broken in. Hard stops with new linings can mean premature wear and earlier replacement. Follow this break-in guideline every time you get new linings.**

**Do not tow a trailer during break-in. See *Towing a Trailer on page 331* for the trailer towing capabilities of your vehicle and more information.**

**Following break-in, engine speed and load can be gradually increased.**



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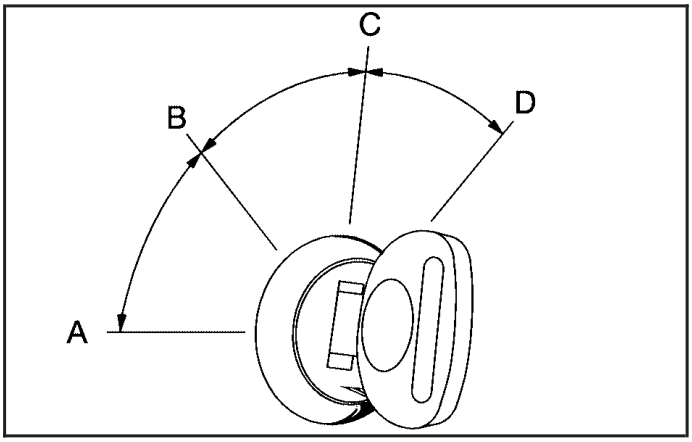
## Ignition Positions

With the key in the ignition switch, you can turn the key to four different positions.




***Notice:*** **If your key seems stuck in OFF and you can't turn it, be sure you are using the correct key; if so, is it all the way in? If it is, then turn the steering wheel left and right while you turn the key hard. Turn the key only with your hand. Using a tool to force it could break the key or the ignition switch. If none of these works, then your vehicle needs service.**

**A (OFF):** This is the only position in which you can insert or remove the key. This position locks the ignition, steering wheel and transmission. It is a theft-deterrent feature.

**B (ACCESSORY):** This position allows you to use things like the radio and the windshield wipers when the engine is off. This position will allow you to turn off the engine, but still turn the steering wheel.

**C (ON):** This position is for driving. When you turn off the engine, the transmission will lock. If you need to shift the transmission out of PARK (P), the ignition key has to be in ON.

The battery could be drained if you leave the key in the ACCESSORY or ON position with the engine off. You may not be able to start your vehicle if the battery is allowed to drain for an extended period of time.

**D (START):** This position starts the engine.



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## Key In the Ignition

Never leave your vehicle with the keys inside, as it is an easy target for joy riders or thieves. If you leave the key in the ignition and park your vehicle, a chime will sound, when you open the driver's door. Always remember to remove your key from the ignition and take it with you. This will lock your ignition and transaxle. Also, always remember to lock the doors.

The battery could be drained if you leave the key in the ignition while your vehicle is parked. You may not be able to start your vehicle after it has been parked for an extended period of time.

## Retained Accessory Power (RAP)

The following accessories on your vehicle may be used for up to 10 minutes after the ignition key is turned from ON to OFF:

- Radio
- Power Windows
- Audio Steering Wheel Controls
- Sunroof

Power to these accessories stops after 10 minutes or if a door is opened. If you want power for another 10 minutes, close all the doors and turn the ignition key to ON and then back to OFF.



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## Starting the Engine

Place the transmission in the proper gear.

Move your shift lever to PARK (P) or NEUTRAL (N). Your engine will not start in any other position -- this is a safety feature. To restart when you are already moving, use NEUTRAL (N) only.

***Notice:*** **Do not try to shift to PARK (P) if your vehicle is moving. If you do, you could damage the transmission. Shift to PARK (P) only when your vehicle is stopped.**

### Starting Procedure

1. With your foot off the accelerator pedal, turn the ignition key to START. When the engine starts, let go of the key. The idle speed will go down as your engine gets warm. Do not race the engine immediately after starting it. Operate the engine and transmission gently to allow the oil to warm up and lubricate all moving parts.

   Your vehicle has a Computer-Controlled Cranking System. This feature assists in starting the engine and protects components. If the ignition key is turned to the START position, and then released when the engine begins cranking, the engine will continue cranking for a few seconds or until the vehicle starts. If the engine does not start and the key is held in START for many seconds, cranking will be stopped after 15 seconds to prevent cranking motor damage. To prevent gear damage, this system also prevents cranking if the engine is already running. Engine cranking can be stopped by turning the ignition switch to the ACCESSORY or OFF position.

***Notice:*** **Cranking the engine for long periods of time, by returning the key to the START position immediately after cranking has ended, can overheat and damage the cranking motor, and drain the battery. Wait at least 15 seconds between each try, to allow the cranking motor to cool down.**



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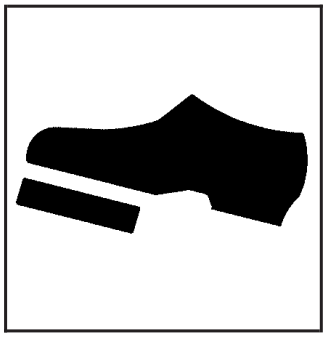
2. If the engine does not start after 5-10 seconds, especially in very cold weather (below 0°F or –18°C), it could be flooded with too much gasoline. Try pushing the accelerator pedal all the way to the floor and holding it there as you hold the key in START for up to a maximum of 15 seconds. Wait at least 15 seconds between each try, to allow the cranking motor to cool down. When the engine starts, let go of the key and accelerator. If the vehicle starts briefly but then stops again, do the same thing. This clears the extra gasoline from the engine. Do not race the engine immediately after starting it. Operate the engine and transmission gently until the oil warms up and lubricates all moving parts.

***Notice:*** **Your engine is designed to work with the electronics in your vehicle. If you add electrical parts or accessories, you could change the way the engine operates. Before adding electrical equipment, check with your dealer. If you do not, your engine might not perform properly. Any resulting damage would not be covered by your vehicle's warranty.**

## Adjustable Throttle and Brake Pedal

If your vehicle has this feature, you can change the position of the throttle and brake pedals.

No adjustment to the pedals can be made when the vehicle is in REVERSE (R) or while using the cruise control.



The switch used to adjust the pedals is located on the instrument panel.

Move the switch rearward to move the pedals closer to your body. Move the switch forward to move the pedals away from your body.



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## Engine Coolant Heater

Your vehicle may have an engine coolant heater.

In very cold weather, 0°F (–18°C) or colder, the engine coolant heater can help. You will get easier starting and better fuel economy during engine warm-up.

Usually, the coolant heater should be plugged in a minimum of four hours prior to starting your vehicle. At temperatures above 32°F (0°C), use of the coolant heater is not required. Your vehicle may also have an internal thermostat in the plug end of the cord. This will prevent operation of the engine coolant heater when the temperature is at or above 0°F (–18°C) as noted on the cord.

### To Use the Engine Coolant Heater

1. Turn off the engine.
2. Open the hood and unwrap the electrical cord. For the 3.6L V6 engines, the cord is located in the engine compartment on the passenger's side of the vehicle in front of the fuse block.

   For the 4.6L V8 engine, the cord is on the front center of the vehicle above the radiator.

   You must remove the plastic cap to access the plug.
3. Plug it into a normal, grounded 110-volt AC outlet.

**⚠ CAUTION:**

**Plugging the cord into an ungrounded outlet could cause an electrical shock. Also, the wrong kind of extension cord could overheat and cause a fire. You could be seriously injured. Plug the cord into a properly grounded three-prong 110-volt AC outlet. If the cord will not reach, use a heavy-duty three-prong extension cord rated for at least 15 amps.**

4. Before starting the engine, be sure to unplug and store the cord as it was before to keep it away from moving engine parts. If you do not, it could be damaged.



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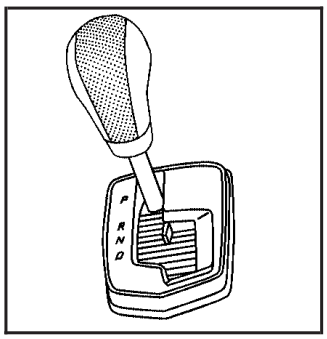
How long should you keep the coolant heater plugged in? The answer depends on the outside temperature, the kind of oil you have, and some other things. Instead of trying to list everything here, we ask that you contact your dealer in the area where you will be parking your vehicle. The dealer can give you the best advice for that particular area.

## Automatic Transmission Operation

The shift lever is located on the center console between the front seats.




There are several different positions for the shift lever.

**PARK (P):** This position locks the rear wheels. It is the best position to use when you start the engine because your vehicle cannot move easily.

### ⚠ CAUTION:

**It is dangerous to get out of your vehicle if the shift lever is not fully in PARK (P) with the parking brake firmly set. Your vehicle can roll.**

**Do not leave your vehicle when the engine is running unless you have to. If you have left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure your vehicle will not move, even when you are on fairly level ground, always set your parking brake and move the shift lever to PARK (P). See *Shifting Into Park (P) on page 129*. If you are pulling a trailer, see *Towing a Trailer on page 331*.**



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Make sure the shift lever is fully in PARK (P) before starting the engine. Your vehicle has an automatic transmission shift lock control system. You must fully apply your regular brakes first and then press the shift lever button before you can shift from PARK (P) when the ignition key is in ON. If you cannot shift out of PARK (P), ease pressure on the shift lever and push the shift lever all the way into PARK (P) as you maintain brake application. Then press the shift lever button and move the shift lever into another gear. See *Shifting Out of Park (P) on page 131*.

***Notice:*** **Shifting to REVERSE (R) while your vehicle is moving forward could damage the transmission. The repairs would not be covered by your warranty. Shift to REVERSE (R) only after your vehicle is stopped.**

**REVERSE (R):** Use this gear to back up.

At low vehicle speeds, you can also use REVERSE (R) to rock your vehicle back and forth to get out of snow, ice, or sand without damaging your transmission. See *If Your Vehicle is Stuck in Sand, Mud, Ice, or Snow on page 321* for additional information.

**NEUTRAL (N):** In this position, the engine does not connect with the wheels. To restart when you are already moving, use NEUTRAL (N) only. You can also use NEUTRAL (N) when your vehicle is being towed.

**⚠ CAUTION:**

**Shifting into a drive gear while your engine is running at high speed is dangerous. Unless your foot is firmly on the brake pedal, your vehicle could move very rapidly. You could lose control and hit people or objects. Do not shift into a drive gear while your engine is running at high speed.**

***Notice:*** **Shifting out of PARK (P) or NEUTRAL (N) with the engine running at high speed may damage the transmission. The repairs would not be covered by your warranty. Be sure the engine is not running at high speed when shifting your vehicle.**



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**DRIVE (D):** This position is for normal driving. It provides the best fuel economy for your vehicle. If you need more power for passing, and you are:

- Going less than 35 mph (55 km/h), push the accelerator pedal about halfway down.
- Going about 35 mph (55 km/h) or more, push the accelerator all the way down. The transmission will shift down to a lower gear and have more power.

  Downshifting the transmission in slippery road conditions could result in skidding, see "Skidding" under *Loss of Control on page 289*.

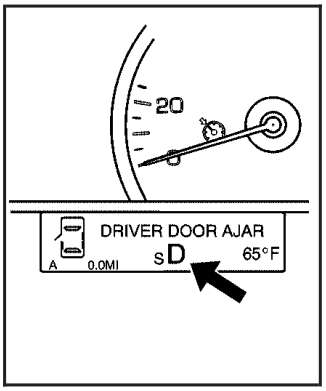
***Notice:*** **Spinning the tires or holding the vehicle in one place on a hill using only the accelerator pedal may damage the transmission. If you are stuck, do not spin the tires. When stopping on a hill, use the brakes to hold the vehicle in place.**

## Driver Shift Control (DSC)

***Notice:*** **If you drive your vehicle at high RPMs without upshifting while using Driver Shift Control (DSC), you could damage your vehicle. Always upshift when necessary while using DSC.**

Your automatic transmission has a Driver Shift Control (DSC) feature that allows you to change gears similar to a manual transmission. To use the DSC feature:

1. Slide the shift lever over from DRIVE (D) to the right into the DSC area.




When the transmission is in DSC mode the sport symbol in the Driver Information Center (DIC) will come on.

If you do not move the shift lever forward or rearward, the vehicle will be in sport mode. When you are in the sport mode the vehicle will still shift automatically. While driving in sport mode, the transmission may remain in a gear longer than it would in the normal driving mode based on braking, throttle input, and vehicle lateral acceleration.



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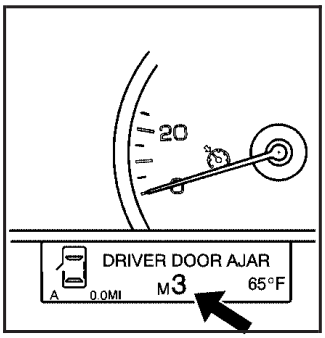
2. To enter the DSC mode, press the shift lever forward to upshift or rearward to downshift.




The DIC will show the requested gear range when moving the shift lever forward or rearward. See *Driver Information Center (DIC) on page 214*

While using the DSC feature, the vehicle will have firmer shifting and increased performance. You can use this for sport driving or when climbing or descending hills, to stay in gear longer, or to down shift for more power or engine braking.

The transmission will only allow you to shift into gears appropriate for the vehicle speed and engine Revolutions Per Minute (RPM). The transmission will not automatically shift to the next higher gear if the engine RPM is too high.

If shifting is prevented for any reason, the currently selected gear will flash multiple times, indicating that the transmission has not shifted gears.

While in the DSC mode, the transmission will automatically downshift when the vehicle comes to a stop and while quickly applying the accelerator to increase speed. This will allow for more power during take-off.

When accelerating your vehicle from a stop in snowy and icy conditions, you may want to shift into second gear. A higher gear ratio allows you to gain more traction on slippery surfaces.



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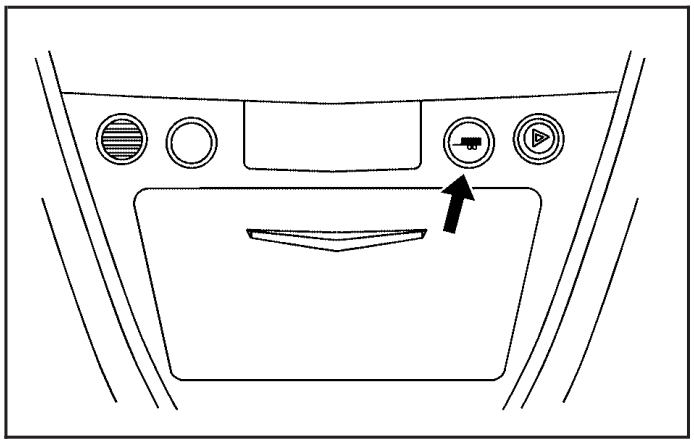
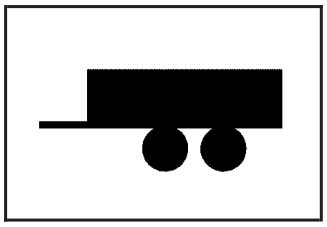
## Tow/Haul Mode



Your vehicle may be equipped with a Tow/Haul mode. The button is located on instrument panel under the climate controls. You should use this feature to assist when towing or hauling a heavy load.



When Tow/Haul is activated the Tow/Haul symbol will illuminate on the instrument panel cluster. See *Tow/Haul Mode* under *Towing a Trailer on page 331* for more information.



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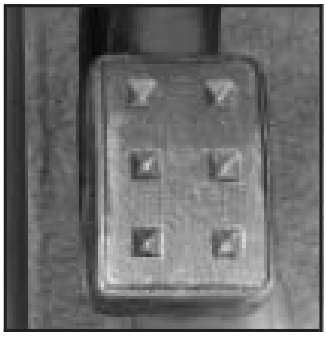
## Grade Braking

Grade Braking assists when driving on a downhill grade. It maintains the vehicle's speed by automatically implementing a shift schedule that uses the engine and the transmission to slow the vehicle. This reduces wear on the brakes system and increases control of the vehicle. The system constantly monitors the vehicle's speed, acceleration, throttle position, and whether the brake pedal is being pressed, and determines when to keep the current vehicle speed or to slow down. The system will then automatically command downshifts that reduces the vehicles speed, until the brake pedal is no longer being pressed. This indicates the desired vehicle speed has been reached.

The tow/haul mode and grade braking shift modes can be activated by pressing the button on the instrument panel console. While in the DSC mode, grade braking is deactivated, allowing the driver to select a gear.

See *Automatic Transmission Operation on page 122*.

## Parking Brake



The parking brake pedal is located on the lower portion of the instrument panel to the left of the steering wheel.

To set the parking brake, hold the regular brake pedal down with your right foot and push the parking brake pedal down with your left foot.

If the ignition is on, the brake system warning light on the instrument panel cluster should come on. If it does not, you need to have your vehicle serviced. See *Brake System Warning Light on page 204* for more information.



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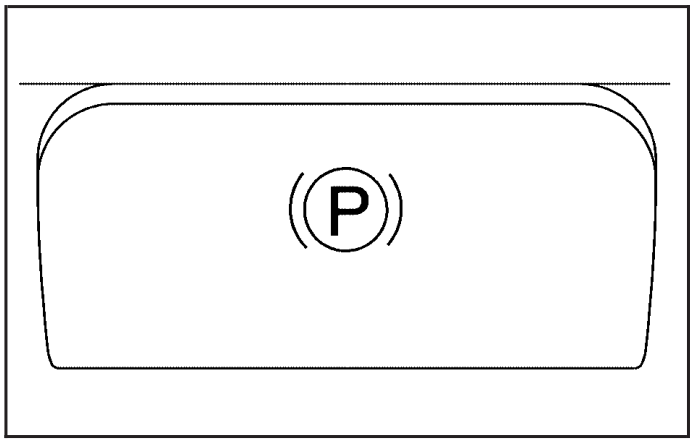


To release the parking brake, pull the release lever located to the left of the steering wheel on the instrument panel.

***Notice:*** **Driving with the parking brake on can overheat the brake system and cause premature wear or damage to brake system parts. Verify that the parking brake is fully released and the brake warning light is off before driving.**

A warning chime will sound if the parking brake is set, the ignition is on, and the vehicle begins to move. To stop the chime, fully release the parking brake.

If you are towing a trailer and parking on a hill, see *Towing a Trailer on page 331* for more information.



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## Shifting Into Park (P)

### ⚠ CAUTION:

**It can be dangerous to get out of your vehicle if the shift lever is not fully in PARK (P) with the parking brake firmly set. Your vehicle can roll. If you have left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure your vehicle will not move, even when you are on fairly level ground, use the steps that follow. If you are pulling a trailer, see *Towing a Trailer on page 331*.**

To shift into PARK (P), use the following steps:

1. Hold the brake pedal down with your right foot.
2. Move the shift lever into PARK (P) by pressing the button on the front of the shift lever while pushing the lever all the way toward the front of the vehicle. Release the button.
3. With your right foot still holding the brake pedal down, set the parking brake with your left foot. See *Parking Brake on page 127* for more information.
4. Turn the key to OFF.
5. Remove the key from the ignition switch and take it with you. If you can leave your vehicle with the key in your hand, the vehicle is in PARK (P).



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## Leaving Your Vehicle With the Engine Running

### ⚠ CAUTION:

**It can be dangerous to leave your vehicle with the engine running. Your vehicle could move suddenly if the shift lever is not fully in PARK (P) with the parking brake firmly set. And, if you leave the vehicle with the engine running, it could overheat and even catch fire. You or others could be injured. Do not leave your vehicle with the engine running.**

If you have to leave your vehicle with the engine running, be sure your vehicle is in PARK (P) and your parking brake is firmly set before you leave it. After you have moved the shift lever into PARK (P), hold the regular brake pedal down. Then, see if you can move the shift lever away from PARK (P) without first pushing the button on the shift lever. If you can, it means that the shift lever was not fully locked into PARK (P).

## Torque Lock

If you are parking on a hill and you do not shift your transmission into PARK (P) properly, the weight of the vehicle may put too much force on the parking pawl in the transmission. You may find it difficult to pull the shift lever out of PARK (P). This is called “torque lock.” To prevent torque lock, set the parking brake and then shift into PARK (P) properly before you leave the driver’s seat. To find out how, see “Shifting Into PARK (P)” listed previously.

If torque lock does occur, you may need to have another vehicle push yours a little uphill to take some of the pressure from the parking pawl in the transmission, so you can pull the shift lever out of PARK (P).



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## Shifting Out of Park (P)

Your vehicle has an automatic transmission shift lock control system.

To shift out of PARK (P):

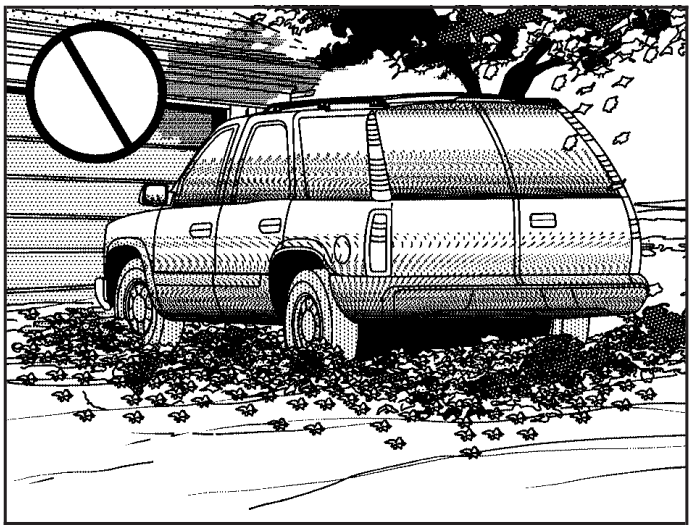
1. Apply the regular brake pedal.
2. Then press the shift lever button.
3. Move the shift lever to the desired gear.

If you are still unable to shift out of PARK (P):

1. Fully release the shift lever button.
2. While holding down the brake pedal, press the shift lever button again.
3. Move the shift lever to the desired gear.

If you still cannot move the shift lever from PARK (P), consult your dealer.

## Parking Over Things That Burn



**⚠ CAUTION:**

**Things that can burn could touch hot exhaust parts under your vehicle and ignite. Do not park over papers, leaves, dry grass, or other things that can burn.**



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## Engine Exhaust

**⚠ CAUTION:**

**Engine exhaust can kill. It contains the gas carbon monoxide (CO), which you cannot see or smell. It can cause unconsciousness and death.**

**You might have exhaust coming in if:**

- **The exhaust system sounds strange or different.**
- **Your vehicle gets rusty underneath.**
- **Your vehicle was damaged in a collision.**
- **Your vehicle was damaged when driving over high points on the road or over road debris.**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

- **Repairs were not done correctly.**
- **Your vehicle or the exhaust system has been modified improperly.**

**If you ever suspect exhaust is coming into your vehicle:**

- **Drive it only with all the windows down to blow out any CO; and**
- **Have your vehicle fixed immediately.**



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## Running the Engine While Parked

It is better not to park with the engine running. But if you ever have to, here are some things to know.

### ⚠ CAUTION:

**Idling the engine with the climate control system off could allow dangerous exhaust into your vehicle. See the earlier caution under *Engine Exhaust on page 132*.**

**Also, idling in a closed-in place can let deadly carbon monoxide (CO) into your vehicle even if the climate control fan is at the highest setting. One place this can happen is a garage. Exhaust — with CO — can come in easily. NEVER park in a garage with the engine running.**

**Another closed-in place can be a blizzard. See *Winter Driving on page 317*.**

### ⚠ CAUTION:

**It can be dangerous to get out of your vehicle if the shift lever is not fully in PARK (P) with the parking brake firmly set. Your vehicle can roll. Do not leave your vehicle when the engine is running unless you have to. If you have left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure your vehicle will not move, even when you are on fairly level ground, always set your parking brake and move the shift lever to PARK (P).**

Follow the proper steps to be sure your vehicle will not move. See *Shifting Into Park (P) on page 129*.

If you are pulling a trailer, see *Towing a Trailer on page 331*.



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# Mirrors

## Automatic Dimming Rearview Mirror with OnStar®

The vehicle may have an automatic dimming inside rearview mirror with OnStar® controls. For more information about OnStar®, see *OnStar® System on page 139*.

⏻ **(On/Off):** The on/off button, located on the lower left side of the mirror, is used for the automatic dimming functions of the rearview mirror.

### Mirror Operation

The automatic dimming feature comes on each time the vehicle is started. Automatic dimming reduces the glare of lights from behind the vehicle.

To turn the automatic dimming feature on or off, press and release the on/off button. The indicator light will illuminate when this feature is on.

### Cleaning the Mirror

When cleaning the mirror, use a paper towel or similar material dampened with glass cleaner. Do not spray glass cleaner directly on the mirror as that may cause the liquid cleaner to enter the mirror housing.

## Automatic Dimming Rearview Mirror with OnStar® and Compass

The vehicle may have an automatic dimming inside rearview mirror with a compass and OnStar® controls. For more information about OnStar®, see *OnStar® System on page 139*.

The mirror has an eight-point compass display in the upper right corner of the mirror. When on, the compass automatically calibrates, or sets the driving direction, as the vehicle is driven. If the vehicle has the navigation option, the direction the vehicle is facing will be displayed on the navigation screen.

⏻ **(On/Off):** The on/off button is located on the lower left side of the mirror and is used for the automatic dimming and compass functions of the rearview mirror.



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## Mirror Operation

The automatic dimming feature comes on each time the vehicle is started.

To turn the automatic dimming feature on or off, press the on/off or AUTO button. The indicator light will illuminate when this feature is on.

## Compass Operation

Press the on/off button once to turn the compass on or off.

When the ignition and the compass feature are on, the compass will show two character boxes for approximately two seconds. After two seconds, the mirror will display the current compass direction.

## Compass Calibration

If after two seconds the display does not show a compass direction, (N for North for example), there may be a strong magnetic field interfering with the compass. Such interference may be caused by a magnetic antenna mount, note pad holder, or similar object. If the letter C appears in the compass window, the compass may need to be reset or calibrated.

The mirror can be calibrated by driving the vehicle in circles at 5 mph (8 km/h) or less until the display reads a direction.

The compass can be calibrated by pressing and holding the on/off button until a C is shown in the compass display.

## Compass Variance

Compass variance is the difference between earth's magnetic north and true geographic north. If the mirror is not adjusted for compass variance, the compass could give false readings.

The mirror is set in zone eight upon leaving the factory. It will be necessary to adjust the compass to compensate for compass variance if the vehicle is driven outside zone eight. Under certain circumstances, such as a long distance, cross-country trip, it will be necessary to adjust the compass variance.



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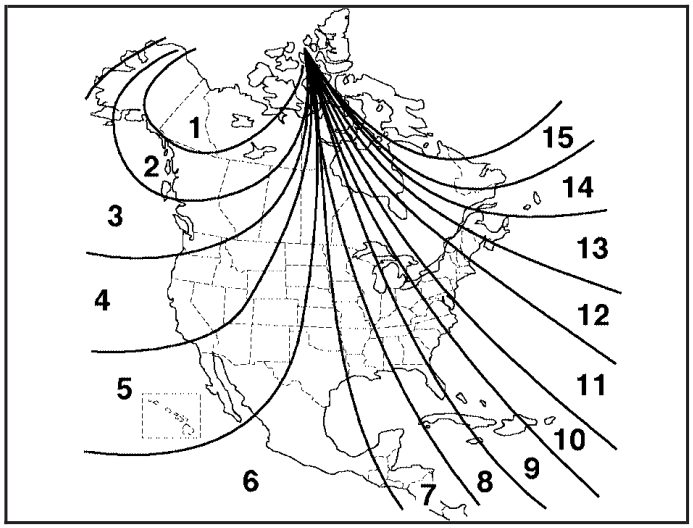
To adjust for compass variance, do the following:

1. Find your current location and variance zone number on the zone map that follows.




2. Press and hold the on/off button until a zone number appears on the display.
3. Once the zone number appears on the display, press the on/off button quickly until you reach the correct zone number. If C appears in the compass window, the compass may need calibration. See “Compass Calibration” listed previously.

## Cleaning the Mirror

When cleaning the mirror, use a paper towel or similar material dampened with glass cleaner. Do not spray glass cleaner directly on the mirror as that may cause the liquid cleaner to enter the mirror housing.



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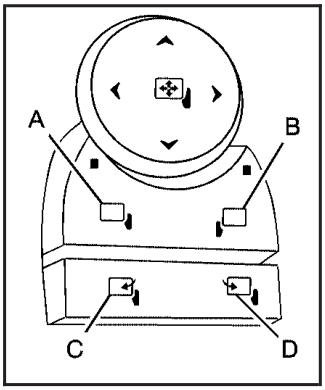
## Outside Power Heated Mirrors




The power mirror controls are located on the driver's door armrest and operate both outside rearview mirrors.

- Press (A) to select the driver's side mirror. The LED indicator will turn on to indicate that this mirror is selected. Then press the arrows located on the four-way control pad to adjust the mirror. Press (A) again to deselect the mirror. The LED indicator will turn off to indicate that this mirror is de-selected.
- Press (B) to select the passenger's side mirror. The LED indicator will turn on to indicate that this mirror is selected. Then press the arrows located on the four-way control pad to adjust the mirror. Press (B) again to deselect the mirror. The LED indicator will turn off to indicate that this mirror is de-selected.

If your vehicle has the power fold function, use the following buttons:

- Press (C), to fold the mirrors out to the driving position.
- Press (D) to fold the mirrors in to the folded position.

If the mirrors are accidentally folded/unfolded manually, they may shake or flutter at normal driving speeds and may not stay in the unfolded position. If this happens, you will need to reset the mirrors. See "Resetting the Power Foldaway Mirrors" next.



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### Resetting the Power Foldaway Mirrors

You will need to reset the power foldaway mirrors if the following occurs:

- The mirrors are accidentally obstructed while folding.
- They are accidentally manually folded/unfolded.
- The mirrors will not stay in the unfolded position.
- The mirrors shake and flutter at normal driving speeds.

To reset the power foldaway mirrors, fold and unfold them one time using the mirror controls. This will reset them to their normal position.

The mirrors can be manually folded inward to prevent damage when going through an automatic car wash or a confined space. To fold, push the mirror toward the vehicle. To return the mirror to its original position, push outward. Be sure to return both mirrors to their original unfolded position before driving.

The preferred position can be stored in memory if the vehicle has the memory option. See *Memory Seat and Mirrors on page 12* for more information.

When the rear window defogger is turned on, both outside rearview mirrors are heated to help clear them of ice, snow, and condensation. See “Rear Window Defogger” under *Dual Climate Control System on page 189* for more information.

## Outside Automatic Dimming Mirror

The driver’s outside mirror may have an automatic dimming feature that helps to reduce glare from other vehicles headlamps. This feature is controlled by the on and off settings on the automatic dimming rearview mirror. See *Automatic Dimming Rearview Mirror with OnStar® on page 134*.

## Outside Curb View Assist Mirror

If the vehicle has memory seat and mirrors, the driver’s or passenger’s mirror can tilt to a preselected position when the vehicle is shifted into REVERSE (R). Use this feature to view the curb when parallel parking.

When the vehicle is shifted out of REVERSE (R) and after a five-second delay, both mirrors return to their original position.



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The driver can select either mirror, or both mirrors to be activated with this feature. Deselect both mirrors to turn off the automatic tilt feature.

If further adjustment is needed after the mirror is tilted, the mirror controls can be used. See *Outside Power Heated Mirrors on page 137* for more information.

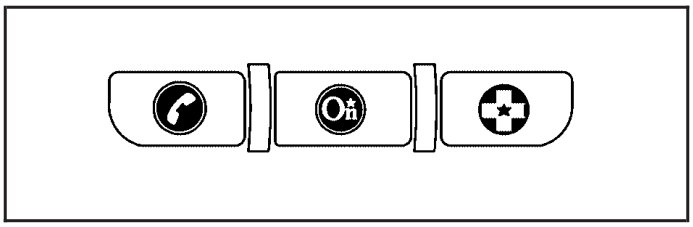
## Outside Convex Mirror

**⚠ CAUTION:**

**A convex mirror can make things (like other vehicles) look farther away than they really are. If you cut too sharply into the right lane, you could hit a vehicle on your right. Check your inside mirror or glance over your shoulder before changing lanes.**

The passenger's side mirror is convex. A convex mirror's surface is curved so that more can be seen from the driver's seat. The mirror does not have a dimming feature.

## OnStar® System



OnStar® uses several innovative technologies and live advisors to provide you with a wide range of safety, security, information, and convenience services. If your airbags deploy, the system is designed to make an automatic call to OnStar® Emergency advisors who can request emergency services be sent to your location. If you lock your keys in the vehicle, call OnStar® at 1-888-4-ONSTAR and they can send a signal to unlock your doors. If you need roadside assistance, press the OnStar® button and they can contact Roadside Service for you.



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OnStar® service is provided to you subject to the OnStar® Terms and Conditions. You may cancel your OnStar® service at any time by contacting OnStar® as provided below. A complete OnStar® Owners Guide and the OnStar® Terms and Conditions are included in the vehicle's OnStar® Subscriber glove box literature. For more information, visit onstar.com or onstar.ca, contact OnStar® at 1-888-4-ONSTAR (1-888-466-7827) or TTY 1-877-248-2080, or press the OnStar® button to speak with an OnStar® advisor 24 hours a day, 7 days a week.

Not all OnStar® features are available on all vehicles. To check if your vehicle is equipped to provide the services described below, or for a full description of OnStar® services and system limitations, see the OnStar® Owner's Guide in your glove box or visit onstar.com.

## OnStar® Services

For new vehicles with OnStar®, the Safe & Sound Plan, or the Directions & Connections® Plan is included for one year from the date of purchase. You can extend this plan beyond the first year, or upgrade to the Directions & Connections® Plan. For more information, press the OnStar® button to speak with an advisor.

Some OnStar® services (such as Remote Door Unlock or Stolen Vehicle Location Assistance) may not be available until you register with OnStar®.

### Available Services with Safe & Sound® Plan

- Automatic Notification of Airbag Deployment
- Advanced Automatic Crash Notification (AACN) (If equipped)
- Link to Emergency Services
- Roadside Assistance
- Stolen Vehicle Location Assistance
- AccidentAssist
- Remote Door Unlock/Vehicle Alert
- OnStar® Vehicle Diagnostics
- GM Goodwrench® On Demand Diagnostics
- OnStar® Hands-Free Calling with 30 complimentary minutes
- OnStar® Virtual Advisor (U.S. Only)



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### Available Services included with Directions & Connections® Plan

- All Safe and Sound Plan Services
- Driving Directions - Advisor delivered or OnStar® Turn-by-Turn Navigation (If equipped)
- RideAssist
- Information and Convenience Services

## OnStar® Hands-Free Calling

OnStar® Hands-Free Calling allows eligible OnStar® subscribers to make and receive calls using voice commands. Hands-Free Calling is fully integrated into the vehicle, and can be used with OnStar® Pre-Paid Minute Packages. Hands-Free Calling may also be linked to a Verizon Wireless service plan in the U.S. or a Bell Mobility service plan in Canada, depending on eligibility. To find out more, refer to the OnStar® Owners Guide in the vehicle's glove box, visit www.onstar.com or www.onstar.ca, or speak with an OnStar® advisor by pressing the OnStar® button or calling 1-888-4-ONSTAR (1-888-466-7827).

## OnStar® Virtual Advisor

OnStar® Virtual Advisor is a feature of OnStar® Hands-Free Calling that uses your minutes to access location-based weather, local traffic reports, and stock quotes. By pressing the phone button and giving a few simple voice commands, you can browse through the various topics. See the OnStar® Owners Guide for more information (Only available in the continental U.S.).

## OnStar® Steering Wheel Controls

Your vehicle may have a Talk/Mute button that can be used to interact with OnStar® Hands-Free Calling. See *Audio Steering Wheel Controls on page 269* for more information.

On some vehicles, you may have to hold the button for a few seconds and give the command "ONSTAR" in order to activate the OnStar® Hands-Free Calling feature.

On some vehicles, the mute button can be used to dial numbers into voicemail systems, or to dial phone extensions. See the OnStar® Owner's Guide for more information.



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## How OnStar® Service Works

In order to provide you with OnStar® services, your vehicle's OnStar® system has the capability of recording and transmitting vehicle information. This information is automatically sent to an OnStar® Call Center at the time of an OnStar® button press, Emergency button press or if your airbags or AACN system deploys. The vehicle information usually includes your GPS location and, in the event of a crash, additional information regarding the accident that your vehicle has been involved in (e.g. the direction from which your vehicle was hit). When you use the Virtual Advisor feature of OnStar® Hands-Free Calling, your vehicle also sends OnStar® your GPS location so that we can provide you with location-based services.

OnStar® service cannot work unless your vehicle is in a place where OnStar® has an agreement with a wireless service provider for service in that area. OnStar® service also cannot work unless you are in a place where the wireless service provider OnStar® has hired for that area has coverage, network capacity and reception when the service is needed, and technology that is compatible with the OnStar® service. Not all services are available everywhere, particularly in remote or enclosed areas, or at all times.

OnStar® service that involves location information about your vehicle cannot work unless GPS satellite signals are unobstructed and available in that place as well.

Your vehicle must have a working electrical system (including adequate battery power) for the OnStar® equipment to operate. There are other problems OnStar® cannot control that may prevent OnStar® from providing OnStar® service to you at any particular time or place. Some examples are damage to important parts of your vehicle in an accident, hills, tall buildings, tunnels, weather or wireless phone network congestion.

### Your Responsibility

You may need to increase the volume of your radio to hear the OnStar® advisor. If the light next to the OnStar® buttons is red, this means that your system is not functioning properly and should be checked by a dealer. If the light appears clear (no light is appearing), your OnStar® subscription has expired. You can always press the OnStar® button to confirm that your OnStar® equipment is active.



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# Universal Home Remote System

## Universal Home Remote System (With Three Round LED)

The Universal Home Remote System provides a way to replace up to three hand-held radio-frequency (RF) transmitters used to activate devices such as garage door openers, security systems, and home lighting.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

The FCC Grant of Equipment Authorization Certificate number is KOBGTV06A.

This device complies with RSS-210 of Industry Canada. Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

The Canadian Registration ID number is 3521A-GTV06A.

Changes or modifications to this system by other than an authorized service facility could void authorization to use this equipment.

## Universal Home Remote System (With One Triangular LED)

The Universal Home Remote System provides a way to replace up to three hand-held radio-frequency (RF) transmitters used to activate devices such as garage door openers, security systems, and home lighting.



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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

The FCC Grant of Equipment Authorization Certificate number is CB2SAHL3.

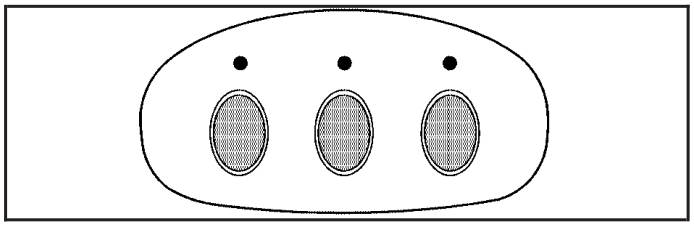
This device complies with RSS-210 of Industry Canada. Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

The Canadian Registration ID number is 2791021849A.

Changes or modifications to this system by other than an authorized service facility could void authorization to use this equipment.

## Universal Home Remote System Operation (With Three Round LED)



Your vehicle may have the Universal Home Remote System. If there are three round Light Emitting Diode (LED) above the Universal Home Remote System buttons, follow the instructions below. If there is one triangular LED above the Universal Home Remote System buttons, follow the instructions under Universal Home Remote System Operation (with one triangular LED).

This system provides a way to replace up to three remote control transmitters used to activate devices such as garage door openers, security systems, and home lighting.

Do not use this system with any garage door opener that does not have the stop and reverse feature. This includes any garage door opener model manufactured before April 1, 1982.



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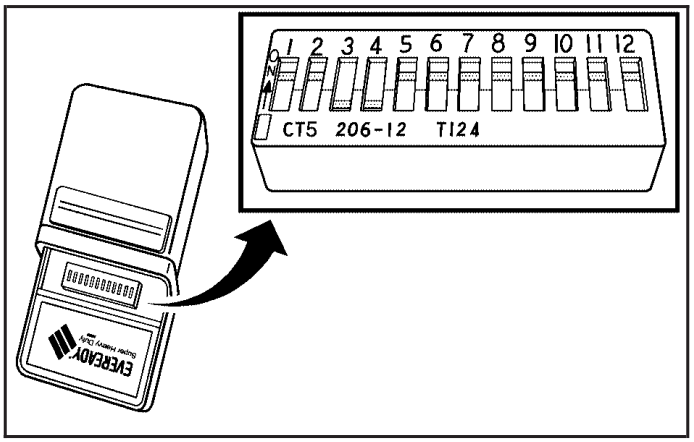
Read the instructions completely before attempting to program the transmitter. Because of the steps involved, it may be helpful to have another person available to assist you in programming the transmitter.

Be sure to keep the original remote control transmitter for use in other vehicles, as well as, for future programming. You only need the original remote control transmitter for fixed code programming. It is also recommended that upon the sale or lease termination of the vehicle, the programmed buttons should be erased for security purposes. See “Erasing your Universal Home Remote Buttons” later in this section.

Be sure that people and objects are clear of the garage door or security device you are programming. When programming a garage door, it is advised to park outside of the garage.




If you do not know if your garage door opener is a fixed code or rolling code device, open your garage door opener’s remote control battery cover. Your garage door opener is a fixed code device if there is a panel of switches. If not, your garage door opener is a rolling code device.



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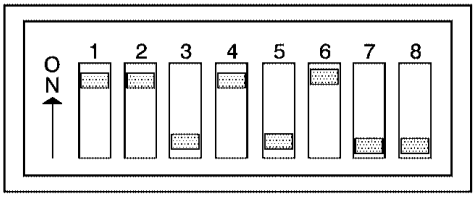
## Programming Universal Home Remote — Fixed Code

Fixed Code garage door openers are used for garage doors produced prior to 1996. Fixed code uses the same coded signal every time, which is manually programmed by setting DIP switches for a unique personal code.

To program up to three channels,

1. Remove the battery cover of the hand-held transmitter.




| Switch Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Switch Position | On | On | Off | On | Off | On | Off | Off |

**Example of Switch Settings**

2. Write down the eight to 12 coding switch settings from left to right. When the switch is in the up position, write “on,” and when a switch is in the down position, write “off”. If a switch is set between the up and down position, write “middle”.
3. Enter these positions into the Universal Home Remote System as follows.

   Press and release all three buttons at the same time to put the device into programming mode.



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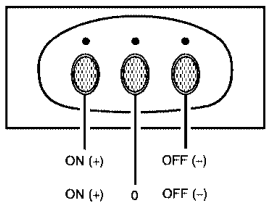
| Switch Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Switch Position | On | On | Off | On | Off | On | Off | Off |
| Your UHR Button | Left | Left | Right | Left | Right | Left | Right | Right |




4. The indicator light will blink slowly. In order from left to right, and within two and one-half minutes, enter each switch setting into the Universal Home Remote System. Push one button for each switch as follows:
   - Left button = “on” switch position.
   - Right button = “off” switch position.
   - Middle button = “middle” switch position.
5. After entering the switch settings, press and release all three buttons at the same time. The indicator lights will turn on.
6. Press and hold the button you would like to use to control the garage door until the garage door moves. The indicator light above the selected button should slowly blink. You may need to hold the button from five to 55 seconds.
7. Immediately release the button when the garage door moves. The indicator light will blink rapidly until programming is complete.
8. Press and release the button again. The garage door should move, confirming that programming is successful and complete.

To program another device such as an additional garage door opener, a security device, or home lighting, repeat Steps 1–8, choosing a different function button in Step 6 than what you used for the garage door opener.



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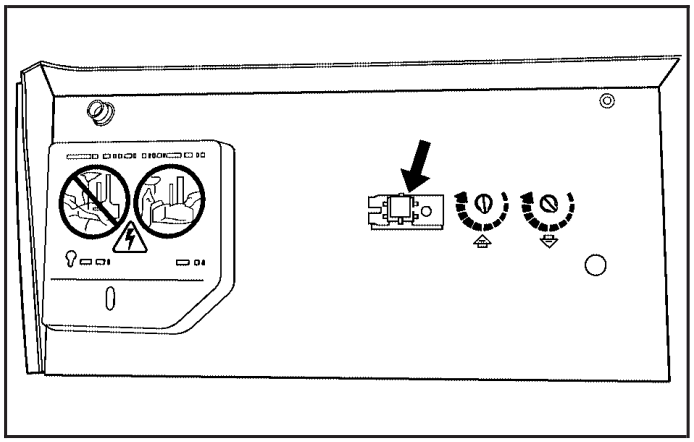
## Programming Universal Home Remote — Rolling Code

Rolling code garage door openers are used for garage doors produced after 1996 and are code protected. Rolling code means the coded signal is changed every time your remote control garage door opener is used.

Programming a rolling code garage door opener involves time-sensitive actions, so read the entire procedure before you begin. If you do not follow these actions, the device will time out and you will have to repeat the procedure.

Follow these steps to program up to three channels:

1. Press the two outside buttons at the same time for one to two seconds, and immediately release them.



2. Go to the garage. Locate the garage door motor head and press and release the “learn” button.

   After pressing the “learn” button, you have 10 to 30 seconds to complete Step 4 depending on your garage control unit. If you cannot locate the “learn” button, refer to the owners guide for your garage door opener.



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3. Press and hold the button you would like to use to control the garage door until the garage door moves. The indicator light, above the selected button, should slowly blink. You may need to hold the button from five to 20 seconds.
4. Immediately release the button when the garage door moves. The indicator light will blink rapidly until programming is complete.
5. Press and release the button again. The garage door should move, confirming that programming is successful and complete.

To program another device such as an additional garage door opener, a security device, or home lighting, repeat Steps 1–5, choosing a different function button in Step 3 than what you used for the garage door opener.

## Using Universal Home Remote

Press and hold the appropriate button for at least half of a second. The indicator light will come on while the signal is being transmitted.

## Reprogramming Universal Home Remote Buttons

You can reprogram any of the three buttons by repeating the instructions.

## Erasing Universal Home Remote Buttons

You should erase the programmed buttons when you sell the vehicle or terminate your lease.

To erase either rolling code or fixed code on the Universal Home Remote device, do the following:

1. Press and hold the two outside buttons at the same time for approximately 20 seconds, until the indicator lights, located directly above the buttons, begin to blink rapidly.
2. Once the indicator lights begin to blink, release both buttons. The codes from all buttons will be erased.

For additional information on Universal Home Remote, see *Customer Assistance Offices on page 491*.



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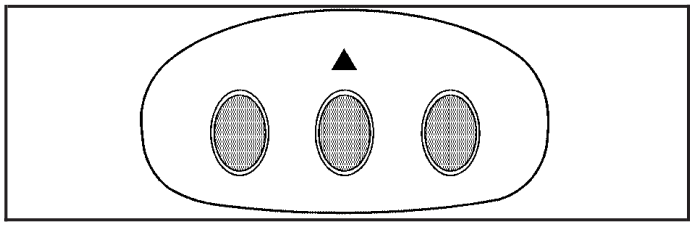
## Universal Home Remote System Operation (With One Triangular LED)



Your vehicle may have the Universal Home Remote System. If there is one triangular Light Emitting Diode (LED) above the Universal Home Remote buttons, follow the instructions below. If your vehicle has three round LED above the Universal Home Remote buttons, follow the instructions under Universal Home Remote System Operation (With three round LED).

Do not use the Universal Home Remote with any garage door opener that does not have the stop and reverse feature. This includes any garage door opener model manufactured before April 1, 1982. If you have a newer garage door opener with rolling codes, please be sure to follow Steps 6 through 8 to complete the programming of your Universal Home Remote Transmitter.

Read the instructions completely before attempting to program the Universal Home Remote. Because of the steps involved, it may be helpful to have another person available to assist you in the programming steps.

Keep the original hand-held transmitter for use in other vehicles as well as for future Universal Home Remote programming. It is also recommended that upon the sale of the vehicle, the programmed Universal Home Remote buttons should be erased for security purposes. See “Erasing Universal Home Remote Buttons” later in this section or, for assistance, see *Customer Assistance Offices on page 491*.

Be sure that people and objects are clear of the garage door or gate operator you are programming. When programming a garage door, it is advised to park outside of the garage.

It is recommended that a new battery be installed in your hand-held transmitter for quicker and more accurate transmission of the radio-frequency signal.



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## Programming Universal Home Remote

Follow these steps to program up to three channels:

1. Press and hold down the two outside Universal Home Remote buttons, releasing only when the Universal Home Remote indicator light begins to flash, after 20 seconds. Do not hold down the buttons for longer than 30 seconds and do not repeat this step to program a second and/or third hand-held transmitter to the remaining two Universal Home Remote buttons.
2. Position the end of your hand-held transmitter about 1 to 3 inches (3 to 8 cm) away from the Universal Home Remote buttons while keeping the indicator light in view.
3. Simultaneously press and hold both the desired Universal Home Remote button and the hand-held transmitter button. Do not release the buttons until Step 4 has been completed.

   Some entry gates and garage door openers may require you to substitute Step 3 with the procedure noted in “Gate Operator and Canadian Programming” later in this section.
4. The indicator light will flash slowly at first and then rapidly after Universal Home Remote successfully receives the frequency signal from the hand-held transmitter. Release both buttons.
5. Press and hold the newly-trained Universal Home Remote button and observe the indicator light.

   If the indicator light stays on continuously, programming is complete and your device should activate when the Universal Home Remote button is pressed and released.

   To program the remaining two Universal Home Remote buttons, begin with Step 2 under “Programming Universal Home Remote.” Do not repeat Step 1 as this will erase all of the programmed channels.

   If the indicator light blinks rapidly for two seconds and then turns to a constant light, continue with Steps 6 through 8 following to complete the programming of a rolling-code equipped device, most commonly, a garage door opener.



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6. Locate in the garage, the garage door opener receiver (motor-head unit). Locate the “Learn” or “Smart” button. This can usually be found where the hanging antenna wire is attached to the motor-head unit.
7. Firmly press and release the “Learn” or “Smart” button. The name and color of the button may vary by manufacturer.

   You will have 30 seconds to start Step 8.
8. Return to the vehicle. Firmly press and hold the programmed Universal Home Remote button for two seconds, then release it. Immediately press and hold the same button a second time for two seconds, then release it. Immediately, press and hold the same button a third time for two seconds, then release.

   The Universal Home Remote should now activate your rolling-code equipped device.

To program the remaining two Universal Home Remote buttons, begin with Step 2 of “Programming Universal Home Remote.” You do not want to repeat Step 1, as this will erase all previous programming from the Universal Home Remote buttons.

## Gate Operator and Canadian Programming

Canadian radio-frequency laws require transmitter signals to time out or quit after several seconds of transmission. This may not be long enough for Universal Home Remote to pick up the signal during programming. Similarly, some U.S. gate operators are manufactured to time out in the same manner.

If you live in Canada, or you are having difficulty programming a gate operator or garage door opener by using the “Programming Universal Home Remote” procedures, regardless of where you live, replace Step 3 under “Programming Universal Home Remote” with the following:

Continue to press and hold the Universal Home Remote button while you press and release every two seconds (cycle) the hand-held transmitter button until the frequency signal has been successfully accepted by the Universal Home Remote. The Universal Home Remote indicator light will flash slowly at first and then rapidly. Proceed with Step 4 under “Programming Universal Home Remote” to complete.



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### Using Universal Home Remote

Press and hold the appropriate Universal Home Remote button for at least half of a second. The indicator light will come on while the signal is being transmitted.

### Erasing Universal Home Remote Buttons

To erase programming from the three Universal Home Remote buttons do the following:

1. Press and hold down the two outside buttons until the indicator light begins to flash, after 20 seconds. Do not hold the two outside buttons for longer than 30 seconds.
2. Release both buttons.

The Universal Home Remote is now in the training (learning) mode and can be programmed at any time beginning with Step 2 under “Programming Universal Home Remote” shown earlier in this section.

Individual buttons cannot be erased, but they can be reprogrammed. See “Reprogramming a Single Universal Home Remote Button” following this section.

### Reprogramming a Single Universal Home Remote Button

To program a device to Universal Home Remote using a Universal Home Remote button previously trained, follow these steps:

1. Press and hold the desired Universal Home Remote button. Do not release the button.
2. The indicator light will begin to flash after 20 seconds. While still holding the Universal Home Remote button, proceed with Step 2 under “Programming Universal Home Remote” shown earlier in this section.

For additional information on Universal Home Remote, see *Customer Assistance Offices on page 491*.

## Storage Areas

### Glove Box

To open the glove box, lift up on the lever. Use your door key to lock or unlock it.



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## Cupholder(s)

Your vehicle has cupholders located between the front seats. Slide the cover back to expose them. There are also cupholders in the armrest of the second row seat. Press the panel on the front of the armrest to expose the cupholders. On the outboard sides of the third row there may also be cupholders.

## Cell Phone Storage Area

Your vehicle has a closeable cell phone/ sunglasses storage area inside both of the front doors. Press the button to open the door.

## Center Console Storage Area

Your vehicle has a center console storage area located between the front seats. It includes storage areas, and accessory power outlet(s) on the rear of the console.

## Luggage Carrier

**⚠ CAUTION:**

**If you try to carry something on top of your vehicle that is longer or wider than the luggage carrier — like paneling, plywood, a mattress and so forth — the wind can catch it as you drive along. This can cause you to lose control. What you are carrying could be violently torn off, and this could cause you or other drivers to have a collision, and of course damage your vehicle. You may be able to carry something like this inside. But, never carry something longer or wider than the luggage carrier on top of your vehicle.**



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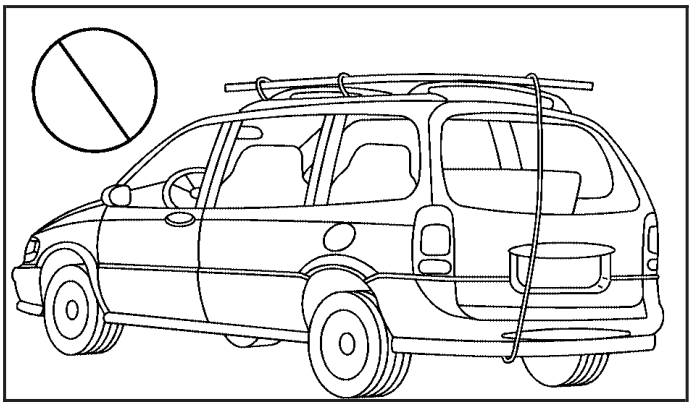

If your vehicle has a luggage carrier, you can load things on top of your vehicle. The luggage carrier has side rails attached to the roof. You can get sliding crossrails through your dealer to use for tying things down. These let you load some things on top of your vehicle, as long as they are not wider or longer than the luggage carrier.

***Notice:*** **Loading cargo on the luggage carrier that weighs more than 100 lbs (45 kg) or hangs over the rear or sides of the vehicle may damage your vehicle. Load cargo so that it rests on the slats as far forward as possible and against the side rails, making sure to fasten it securely.**

## Cargo Cover

If your vehicle has a cargo cover, you can use it to cover items in the rear of the vehicle. Pull the cover from the passenger's side to the driver's side and slide the ends into the slots to secure it. When it is not in use, take the ends out of the slots and allow the cover to roll back up.

## Cargo Management System

Your vehicle may have a cargo management system. It provides extra storage space for the rear of the vehicle.

The cargo management system has three compartments. The one closest to the front of the vehicle opens from behind the second row. The center compartment has a divider. The compartment closest to the rear of the vehicle has a removable storage bin.



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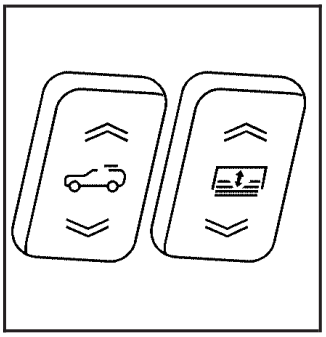
# Sunroof

## Sunroof (Ultra View®)

**⚠ CAUTION:**

**People who are in a crash and not wearing a safety belt properly can suffer much worse injuries. They can hit things inside the vehicle or be ejected from it, and be seriously injured or killed. This is true for any vehicle occupant, in any motor vehicle. In a rollover or other crash, the Ultra View® roof can be damaged or destroyed. People who are unbelted would be at risk of being ejected from the vehicle. Always fasten your safety belt, and check that your passengers' belts are fastened properly too.**

The vehicle may have an Ultra View® sunroof over the first two rows of seats. The ignition must be turned to ON, or ACCESSORY, or the Retained Accessory Power (RAP) must be active to operate it. See *Retained Accessory Power (RAP) on page 118*.



The sunroof/sunshade switches are located in the headliner between the driver and front passenger.

One switch operates the sunroof and the other switch operates the sunshade.



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Press the back of the sunroof switch to open the sunroof. When the switch is pressed to the first stop the sunroof will open to a desired position. Press the switch to the second stop to express open the sunroof to a preset comfort position. Press the second stop again to fully express open the sunroof. Press the front of the switch to close the sunroof. The first stop will close the sunroof at a desired position at normal speed, and the second stop will express close the roof.

Press the back of the sunshade switch to open the sunshade. Press the front of the switch to the first stop to close the sunshade to a desired position at a normal speed. Press the switch forward to the second stop to express close the sunshade.

## Anti-Pinch Feature

If an object is in the path of the sunroof when it is closing, the anti-pinch feature will detect the object and stop the sunroof from closing at the point of the obstruction. The sunroof will then reverse. To close the sunroof once it has re-opened, remove the obstruction and press the front of the sunroof switch.

## Resynchronization

To resynchronize the sunroof and sunshade, do the following.

1. With the engine running, press and hold both the sunroof switch in the open position and the sunshade switch in the closed position for six seconds.
2. Release both buttons.
3. When the sunroof reaches the fully closed position, the sunshade will close.
4. After the sunroof and sunshade have fully closed, continue to hold the sunroof switch in the closed position for an additional three or four seconds to complete the resynchronization process.



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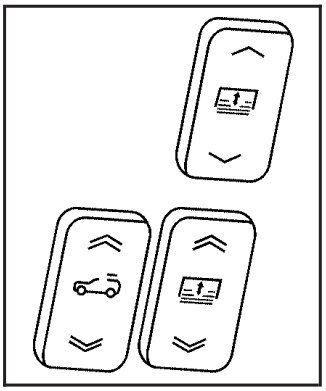
## Sunroof (Ultra View® Plus)

### ⚠ CAUTION:

**People who are in a crash and not wearing a safety belt properly can suffer much worse injuries. They can hit things inside the vehicle or be ejected from it, and be seriously injured or killed. This is true for any vehicle occupant, in any motor vehicle. In a rollover or other crash, the Ultra View® roof can be damaged or destroyed. People who are unbelted would be at risk of being ejected from the vehicle. Always fasten your safety belt, and check that your passengers' belts are fastened properly too.**

The vehicle may have an Ultra View® sunroof over the first two rows of seats and a smaller sunroof over the third row seat. Both have sunshades, but the back sunroof does not open. The ignition must be turned to ON, or ACCESSORY, or the Retained Accessory Power (RAP) must be active to operate it. See *Retained Accessory Power (RAP) on page 118*



The sunroof/sunshade switches are located in the headliner between the driver and front passenger.



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One switch operates the front sunroof and another switch operates the front sunshade. The third switch is for the rear sunshade.

Press the back of the sunroof switch to open the sunroof. Press the switch to the first stop to open the sunroof to a desired position. Press the switch to the second stop to express open the sunroof to a preset comfort stop. Press the switch at the second stop again to express open the sunroof completely. Press the front of the sunroof switch to close the sunroof. Press the switch to the first stop to close the sunroof to a desired position. Press the front of the switch to the second stop to express close the sunroof.

Press the back of the front sunshade switch to open it. Press it to the first stop to open the front sunshade to a desired position. Press it again to express open the sunshade. Press the front of the front sunshade switch to close it. Press to the first stop to close it to a desired position. Press the switch to the second stop to express close the front sunshade

Press the back of the rear sunshade switch to open the rear sunshade. Press the front of the switch to close the rear sunshade.

## Anti-Pinch Feature

If an object is in the path of the sunroof when it is closing, the anti-pinch feature will detect the object and stop the sunroof from closing at the point of the obstruction. The sunroof will then reverse. To close the sunroof once it has re-opened, remove the obstruction and press the front of the sunroof switch.



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## Resynchronization

To resynchronize the front sunroof and front and rear sunshades, do the following.

1. With the engine running, press and hold the rear sunshade switch in the closed position for about 15 seconds – the shade will move to the stop position.
2. Briefly release the button, and press the rear sunshade switch in the closed position again. The shade will now move to the fully open position and then return to the fully closed position. Keep the switch pushed in the closed position for the entire open/close cycle of the shade.
3. At the same time, press and hold the front sunroof switch in the open position and the front sunshade switch in the closed position for about six seconds.

   When the front sunroof reaches the fully closed position, the front sunshade will close.
4. After the sunroof and sunshade have fully closed, continue to hold the sunroof switch in the closed position for an additional three or four seconds to complete the resynchronization process.



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## NOTES



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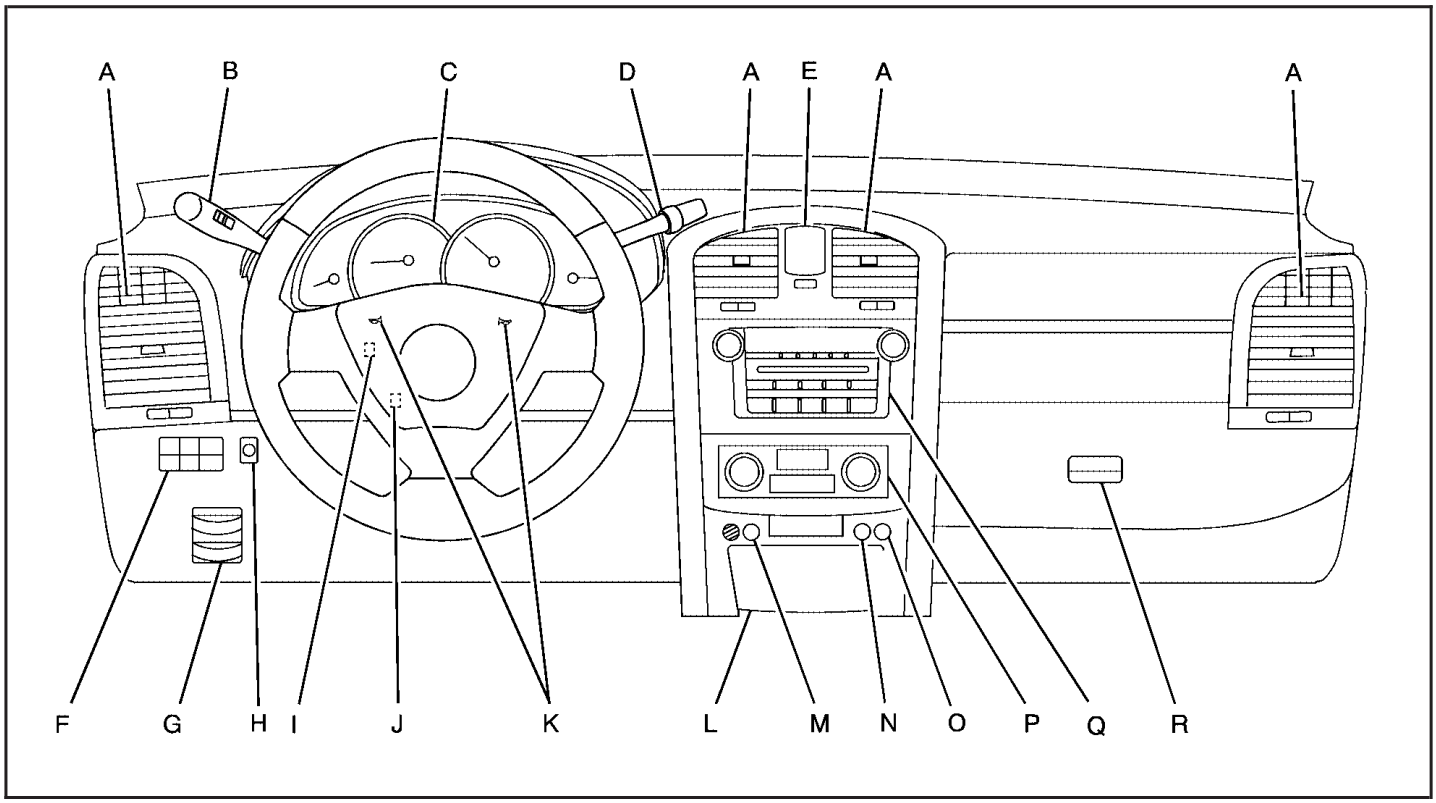
# Instrument Panel Overview



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The main components of the instrument panel are the following:

A. Air Outlets. See *Outlet Adjustment on page 194*.
B. Turn Signal/Multifunction Lever. See *Turn Signal/Multifunction Lever on page 167*.
C. Instrument Panel Cluster. See *Instrument Panel Cluster on page 198*.
D. Windshield Wiper Lever. See *Windshield Wipers on page 170*.
E. Analog Clock. See *Analog Clock on page 188*.
F. Driver Information Center Controls (DIC). See *DIC Controls and Displays on page 215*.
G. Hood Release. See *Hood Release on page 355*. Parking Brake Release. See *Parking Brake on page 127*.
H. Instrument Panel Brightness Control. See *Instrument Panel Brightness on page 181*.
I. Tilt Wheel Lever. See *Tilt Wheel on page 166*.
J. Adjustable Pedal Button (If Equipped). See *Adjustable Throttle and Brake Pedal on page 120*.
K. Horn. See *Horn on page 166*.
L. Ashtray (If Equipped). See *Ashtray(s) and Cigarette Lighter on page 187*.
M. Traction Control Button. See *Traction Control System (TCS) on page 281*.
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O. Hazard Warning Flasher Button. See *Hazard Warning Flashers on page 166*.
P. Dual Climate Control System. See *Dual Climate Control System on page 189*.
Q. Audio System. See *Audio System(s) on page 240*.
R. Glove Box. See *Glove Box on page 153*.



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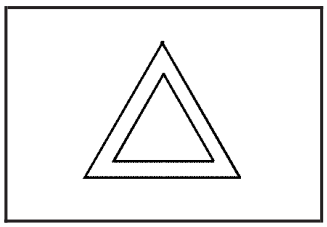
## Hazard Warning Flashers

The hazard warning flashers let you warn the police and others that you have a problem. The front and rear turn signal lamps will flash on and off.



The hazard warning flasher button is located on the instrument panel below the climate control system.

The hazard warning flashers work no matter what position the key is in, and even if the key is not in the ignition switch.

Press the button to make the front and rear turn signal lamps flash on and off. Press the button again to turn the flashers off.

While the hazard warning flashers are on, the turn signals do not work.

## Other Warning Devices

If you carry reflective triangles, you can set them up at the side of the road about 300 feet (100 m) behind your vehicle.

## Horn

Press near or on the horn symbols on your steering wheel pad to sound the horn.

## Tilt Wheel

A tilt wheel allows you to adjust the steering wheel before you drive. You can raise it to the highest level to give your legs more room when you exit and enter the vehicle.



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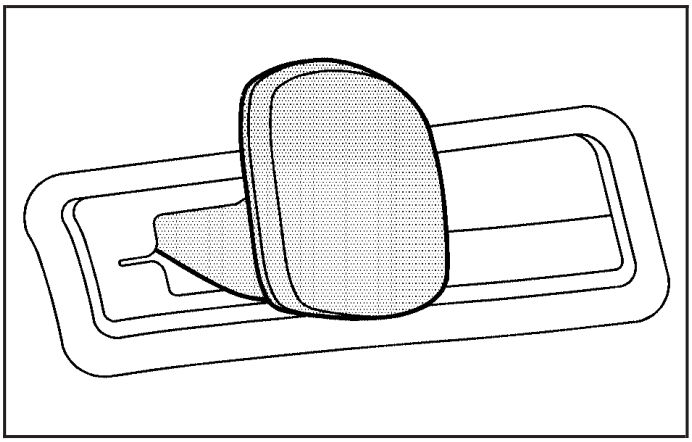
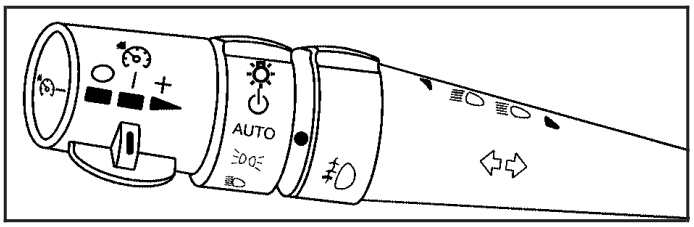


The lever that allows you to tilt the steering wheel is located on the left side of the steering column.

To tilt the wheel, hold the steering wheel and pull the lever. Then move the steering wheel to a comfortable position and release the lever to lock the wheel in place.

## Turn Signal/Multifunction Lever




The lever on the left side of the steering column includes the following:

- Turn and Lane-Change Signals. See *Turn and Lane-Change Signals on page 168*.
- Exterior Lamp Control. See *Headlamps on page 178*.
- Headlamp High/Low-Beam Changer. See *Headlamp High/Low-Beam Changer on page 169*.
- Flash-To-Pass Feature. See *Flash-to-Pass on page 169*.
- Fog Lamps. See *Fog Lamps on page 181*.
- Cruise Control. See *Cruise Control on page 174*.



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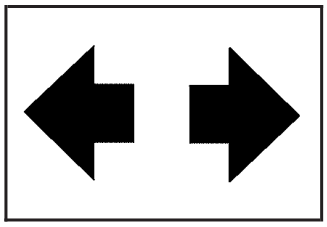
## Turn and Lane-Change Signals

To signal a turn, move the lever all the way up or down. The lever returns automatically when the turn is complete.



An arrow on the instrument panel cluster will flash in the direction of the turn or lane change.

Raise or lower the lever until the arrow starts to flash to signal a lane change. Hold it there until the lane change is complete. The lever returns to its original position when it is released.

Rapid flashing of arrows when signaling for a turn or lane change may be caused by a burned-out signal bulb. Other driver's will not see the signal.

Replace burned-out bulbs to help avoid possible accidents. Check the fuse and for burned-out bulbs if the arrow fails to work when signaling a turn. See *Fuses and Circuit Breakers on page 455* for more information.

### Turn Signal On Chime

If the turn signal is left on for about ¾ mile (1.2 km), a warning chime will sound and the TURN SIGNAL ON message will appear on the Driver Information Center (DIC) display. See "Turn Signal On" under *DIC Warnings and Messages on page 220* for more information.



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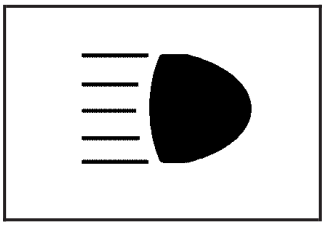
## Headlamp High/Low-Beam Changer

Push forward on the turn signal/multifunction lever to change the headlamps from low to high beam. Pull the lever back and then release it to change from high to low beam.

If you turn the vehicle off with the high beams on, the high beams will be on the next time you start your vehicle.



This light on the instrument panel cluster will be on, indicating high-beam usage.

## Flash-to-Pass

This feature allows you to use the high-beam headlamps to signal the driver in front of you that you want to pass.

Pull and hold the turn signal/multifunction lever toward you to use this feature. When you do this, the following will occur:

- If the headlamps are off, in low-beam or in Daytime Running Lamps (DRL) mode, the high-beam headlamps will turn on. They will stay on as long as you hold the lever there. Release the lever to turn them off.
- If the headlamps are in high-beam mode, they will switch to low beam. To return to high-beam, push the lever away from you.



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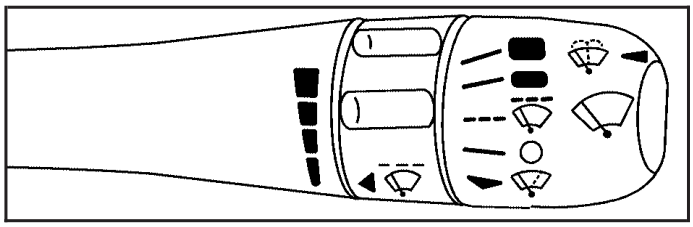
## Windshield Wipers



The lever on the right side of the steering column operates the windshield wipers.

**(Mist):** Pull the lever down and release it for a single wiping cycle. The lever will return to its original position. For more cycles, hold the lever down before releasing it.

**(Off):** Put the lever in this position to turn off the wipers.

**(Delay):** Put the lever in this position to set a delay between wipes. Turn the delay adjustment band to set the length of the delay.

**(Delay Adjustment):** Use this band to set the length of the delay between wipes when using the delay feature.

The closer you move the band toward mist, the longer the delay. The windshield wiper lever must be in delay for this feature to work.

**(Low Speed):** Put the lever in this position for slow, steady wiping cycles.

**(High Speed):** Put the lever in this position for rapid wiping cycles.

If the windshield wipers are in use for about six seconds while you are driving, the exterior lamps will come on automatically if the exterior lamp control is in AUTO. See *Wiper Activated Headlamps on page 178* for more information.

Be sure to clear ice and snow from the wiper blades before using them. If they are frozen to the windshield, gently loosen or thaw them. If the blades do become damaged, install new blades. For more information, see *Windshield Wiper Blade Replacement on page 397*.

Heavy snow or ice can overload the wiper motor. A circuit breaker will stop the motor until it cools down. Clear away snow or ice to prevent an overload.



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## Windshield Washer

**⚠ CAUTION:**

**In freezing weather, do not use your washer until the windshield is warmed. Otherwise the washer fluid can form ice on the windshield, blocking your vision.**

The windshield washer button is located at the end of the windshield wiper lever.

**(Washer Fluid):** Press this button to wash the windshield. Washer fluid will squirt onto the windshield and the wipers will run for a few cycles to clear the windshield. For more wash cycles, press and hold the button.

If your vehicle is low on washer fluid, the WASHER FLUID LOW ADD FLUID message will appear on the Driver Information Center (DIC) display. See *DIC Warnings and Messages on page 220* for more information.

If the headlamps are on when you wash the windshield, the headlamp washer will turn on, if your vehicle has them. Both the windshield and the headlamps will be washed. See *Headlamp Washer on page 173*.



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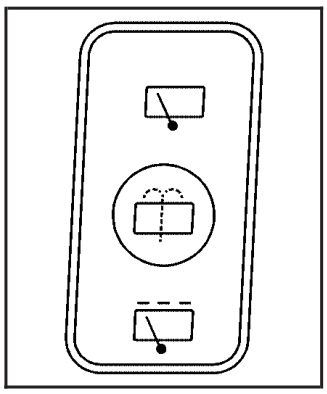
## Rear Window Wiper/Washer

**⚠ CAUTION:**

**In freezing weather, do not use your washer until the windshield is warmed. Otherwise the washer fluid can form ice on the windshield, blocking your vision.**



The switch for the rear washer/wiper is located in the overhead console.

**(Rear Wiper):** Press this side of the button to turn the rear wiper on.

**(Washer Fluid):** Press this button to wash and wipe the window.

The rear window washer uses the same fluid bottle as the windshield washer. However, the rear window washer will run out of fluid before the windshield washer. If you can wash your windshield but not your rear windows, check the fluid level.

**(Delay):** Press this side of the button to turn on delayed wiping.

To turn either the delay or rear wiper setting off, press the opposite side of the button to turn it to the off position. Pressing the button all the way down on either side will activate a wiper setting.



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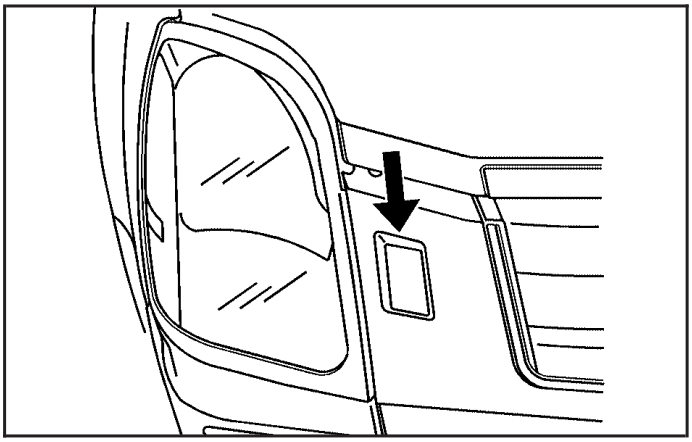
## Headlamp Washer

Your vehicle may have headlamp washers. The headlamp washers clear debris from the headlamp lenses.



The headlamp washers are located to the inside of the headlamps.

To wash the headlamps, press the washer button located at the end of the windshield wiper lever. Both the headlamps and the windshield will be washed. After the first wash, the headlamps will be washed after the fifth press of the windshield washer button.

The headlamps must be on to be washed. If the headlamps are off, only the windshield will be washed when the washer button is pressed. If the washer fluid is low, the headlamp washers will not work.

See *Windshield Washer on page 171* for additional information.



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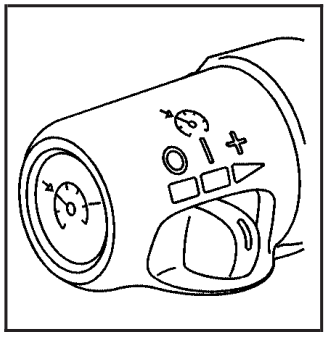
## Cruise Control



These controls are located on the end of the multifunction lever.

○ **(Off):** Move to this position to turn the system off.

| **(On):** Move to this position to turn on the system.

**+ (Resume/Accelerate):** Move to this position to make the vehicle resume a previously set speed or to accelerate when cruise is already active.

**(Set/Decrease):** Press this button to set the speed or to decrease the speed when cruise is already active.

With cruise control, a speed of about 25 mph (40 km/h) or more can be maintained without keeping your foot on the accelerator. This can really help on long trips. Cruise control does not work at speeds below about 25 mph (40 km/h).

If you apply your brakes, the cruise control will shut off.

### ⚠ CAUTION:

**Cruise control can be dangerous where you cannot drive safely at a steady speed. So, do not use your cruise control on winding roads or in heavy traffic.**

**Cruise control can be dangerous on slippery roads. On such roads, fast changes in tire traction can cause excessive wheel slip, and you could lose control. Do not use cruise control on slippery roads.**



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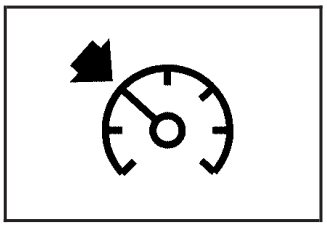
If your vehicle is in cruise control when the Traction Control System (TCS) begins to limit wheel spin, the cruise control will automatically disengage. See *Traction Control System (TCS) on page 281* and *StabiliTrak® System on page 283*. When road conditions allow you to safely use it again, you may turn the cruise control back on.

## Setting Cruise Control

**⚠ CAUTION:**

**If you leave your cruise control on when you are not using cruise, you might hit a button and go into cruise when you do not want to. You could be startled and even lose control. Keep the cruise control switch off until you want to use cruise control.**

1. Move the cruise control switch to on.
2. Get up to the speed desired.
3. Press in the set button at the end of the lever and release it.
4. Take your foot off the accelerator pedal.



This light on the instrument panel cluster will come on while cruise control is on.



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## Resuming a Set Speed

Suppose you set the cruise control at a desired speed and then you apply the brake. This, of course, disengages the cruise control. But it does not need to be reset.

Once you are going about 25 mph (40 km/h) or more, you can move the cruise control switch briefly from on to resume/accelerate.

You will go right back up to your chosen speed and stay there.

If you hold the switch at resume/accelerate the vehicle will keep going faster until you release the switch or apply the brake. Do not hold the switch at resume/accelerate, unless you want the vehicle to go faster.

## Increasing Speed While Using Cruise Control

There are two ways to go to a higher speed:

- Use the accelerator pedal to get to the higher speed. Press the set button at the end of the lever, then release the button and the accelerator pedal. You will now cruise at the higher speed.
- Move the cruise switch from on to resume/accelerate. Hold it there until you get up to the desired speed, and then release the switch. To increase your speed in very small amounts, move the switch briefly to resume/accelerate. Each time you do this, your vehicle will go about 1 mph (1.6 km/h) faster.

If using the accelerator pedal and the set button at end of the lever to increase cruise set speed, your new set speed must be at least 5 mph higher than current speed for this method to work. If it is not 5 mph higher, switch cruise switch off, then on, and then reset your speed using the set button.



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## Reducing Speed While Using Cruise Control

There are two ways to reduce your speed while using cruise control:

- Press in the button at the end of the lever until you reach the lower speed desired, then release it.
- To slow down in very small amounts, briefly press the set button. Each time you do this, you will go about 1 mph (1.6 km/h) slower.

## Passing Another Vehicle While Using Cruise Control

Use the accelerator pedal to increase your speed. When you take your foot off the pedal, the vehicle will slow down to the cruise control speed you set earlier.

## Using Cruise Control on Hills

How well the cruise control works on hills depends upon the vehicle speed, load, and the steepness of the hills. When going up steep hills, you might have to step on the accelerator pedal to maintain the vehicle's speed. When going downhill, you might have to brake to keep the vehicle's speed down. Applying the brake will turn off the cruise control. If you need to apply the brake due to the grade of the downhill slope, you might not want to attempt to use your cruise control feature.

## Ending Cruise Control

To end a cruise control session, step lightly on the brake pedal.

Stepping on the brake pedal will end the current cruise control session only. Move the cruise control switch to off to turn off the system completely.

## Erasing Speed Memory

When you turn off the cruise control or the ignition, the cruise control set speed memory is erased.



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## Headlamps

The exterior lamp control is located in the middle of the turn signal/multifunction lever.

**(Exterior Lamp Control):** Turn the control with this symbol on it to operate the exterior lamps.

The exterior lamp control has four positions:

**(On/Off):** Turn the control to this position to turn off all lamps except the Daytime Running Lamps (DRL).

**AUTO (Automatic):** Turn the control to this position to put the headlamps in automatic mode. AUTO mode will turn the exterior lamps on and off depending upon how much light is available outside of the vehicle.

**(Parking Lamps):** Turn the control to this position to turn on the parking lamps together with the following:

- Sidemarker Lamps
- Taillamps
- License Plate Lamps
- Instrument Panel Lights

**(Headlamps):** Turn the control to this position to turn on the headlamps, together with the previously listed lamps and lights.

## Wiper Activated Headlamps

This feature activates the headlamps and parking lamps after the windshield wipers have been in use for about six seconds. For this feature to work, the exterior lamp control must be in AUTO.

When the exterior lamp control is off or in the parking lamp position and the windshield wiper control is in any position except off, the Headlamps Suggested message will appear on the DIC display. See “Headlamps Suggested Message” under *DIC Warnings and Messages on page 220* for more information.

When the ignition is turned to OFF, the wiper-activated headlamps will immediately turn off. They will also turn off if the windshield wiper control is turned off.



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## Headlamps on Reminder

A warning chime will sound if the exterior lamp control is left on in either the headlamp or parking lamp position and the driver's door is opened with the ignition off. See *Lights On Reminder on page 212* for additional information.

## Daytime Running Lamps (DRL)

Daytime Running Lamps (DRL) can make it easier for others to see the front of your vehicle during the day. DRL can be helpful in many different driving conditions, but they can be especially helpful in the short periods after dawn and before sunset. Fully functional daytime running lamps are required on all vehicles first sold in Canada.

The DRL system will make the turn signal lamps come on when the following conditions are met:

- It is daylight and the ignition is in the ON or START position.
- The exterior lamp control is in the off or AUTO position and the headlamps are off.
- The automatic transmission is not in PARK (P).

When DRL are on, only the front turn signal lamps will be on. No other exterior lamps will be on. The instrument panel cluster will not be lit up either.



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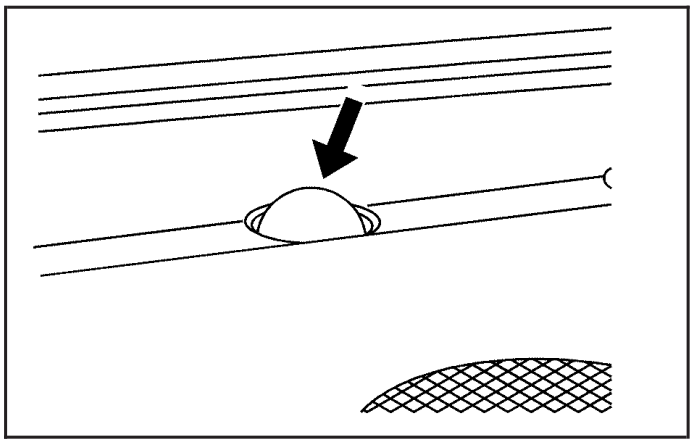
When the exterior lamp control is in AUTO and it is dark enough outside, the DRL will turn off and the low-beam headlamps will turn on. When it is bright enough outside, the low-beam headlamps will go off, and the DRL will turn back on. If you start the vehicle in a dark garage, the automatic headlamp system will come on immediately. Once you leave the garage, it will take about one minute for the automatic headlamp system to change to DRL if it is light outside. During that delay, the instrument panel cluster may not be as bright as usual. Make sure the instrument panel brightness lever is in the full bright position. See *Instrument Panel Brightness on page 181*.

To drive the vehicle with the DRL off, turn the exterior lamp control off. Then turn on the fog lamps or parking lamps, and the DRL will turn off. This will work regardless of gear position and whether or not the parking brake is set.

As with any vehicle, you should turn on the regular headlamp system when you need it.

## Light Sensor



The light sensor for the DRL and AUTO headlamp feature is located on top of the instrument panel. If you cover the sensor, it will prevent it from sensing light, and the exterior lamps may come on whenever the ignition is on.



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## Fog Lamps

Use the fog lamps for better vision in foggy or misty conditions.

The fog lamp controls are located on the turn signal/multifunction lever.

**(Fog Lamps):** The band with this symbol is used to turn the fog lamps on and off.

The parking lamps must be on for the fog lamps to work.

To turn the fog lamps on, turn the fog lamp band on the lever up to the dot and release it. The band will return to its original position.

To turn the fog lamps off, turn the fog lamp band up to the dot and release it. The band will return to its original position, and the fog lamps will turn off. If the high-beam headlamps are turned on, the fog lamps will also turn off. They will turn back on again when you switch back to low-beam headlamps.

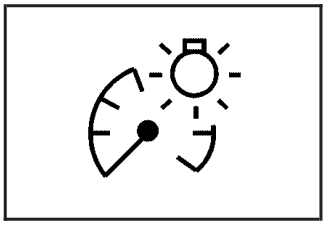
Some localities have laws that require the headlamps to be on along with the fog lamps.

## Exterior Lighting Battery Saver

If the parking lamps or headlamps have been left on, the exterior lamps will turn off about 10 minutes after the ignition is turned to OFF. This protects against draining the battery in case the headlamps or parking lamps have been left on. The battery saver does not work if the headlamps are turned on after the ignition is turned to OFF.

If you need to leave the lamps on for more than 10 minutes, use the exterior lamp control to turn the lamps back on.

## Instrument Panel Brightness



Turn the knob clockwise or counterclockwise to brighten or dim the interior lights.

To turn on the dome lamps, turn the knob completely clockwise as far as it will go. The dome lamps stay on until they are turned off.



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## Entry Lighting

The entry lighting system turns on the reading and dome lamps and the backlighting to the exterior lamp control when a door is opened or if the Remote Keyless Entry (RKE) transmitter unlock button is pressed. If activated by the (RKE), the lighting will remain active for about 25 seconds. The entry lighting system uses the light sensor on the instrument panel; so it must be dark outside in order for the lamps to turn on. The lamps turn off about 25 seconds after the last door is closed. They will dim to off if the ignition key is turned to ON, or immediately turn off if the power locks are used.

## Parade Dimming

This feature prohibits dimming of the instrument panel displays and backlighting during daylight hours when the key is in the ignition and the headlamps are on. This feature operates with the light sensor and is fully automatic. When the light sensor reads darkness outside and the parking lamps are active, the instrument panel displays can be adjusted by sliding the instrument panel brightness lever toward the symbol to brighten or away from the symbol to dim the lighting.

## Reading Lamps

The reading lamps are located on the overhead console. These lamps come on automatically when any door is opened.

For manual operation, press the button next to each lamp to turn it on or off.

If the reading lamps are left on, they automatically shut off 10 minutes after the ignition has been turned off.



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## Electric Power Management

The vehicle has Electric Power Management (EPM) that estimates the battery's temperature and state of charge. It then adjusts the voltage for best performance and extended life of the battery.

When the battery's state of charge is low, the voltage is raised slightly to quickly put the charge back in. When the state of charge is high, the voltage is lowered slightly to prevent overcharging. If the vehicle has a voltmeter gage or voltage display on the Driver Information Center (DIC), you may see the voltage move up or down. This is normal. If there is a problem, an alert will be displayed.

The battery can be discharged at idle if the electrical loads are very high. This is true for all vehicles. This is because the generator (alternator) may not be spinning fast enough at idle to produce all the power that is needed for very high electrical loads.

A high electrical load occurs when several of the following loads are on: headlamps, high beams, fog lamps, rear window defogger, climate control fan at high speed, heated seats, engine cooling fans, trailer loads, and loads plugged into accessory power outlets.

EPM works to prevent excessive discharge of the battery. It does this by balancing the generator's output and the vehicle's electrical needs. It can increase engine idle speed to generate more power, whenever needed. It can temporarily reduce the power demands of some accessories.

Normally, these actions occur in steps or levels, without being noticeable. In rare cases at the highest levels of corrective action, this action may be noticeable to the driver. If so, a Driver Information Center (DIC) message might be displayed, such as Battery Saver Active or Service Battery Charging System. If this message is displayed, it is recommended that the driver reduce the electrical loads as much as possible. See *DIC Warnings and Messages on page 220*.



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## Ultrasonic Rear Parking Assist (URPA)

Your vehicle may have the Ultrasonic Rear Parking Assist (URPA) system. It is designed to help you park while the vehicle is in REVERSE (R). It operates only at very low speeds, less than 3 mph (5 km/h). URPA can help make parking easier and help you avoid colliding with objects such as parked vehicles. The URPA system can detect objects up to 5 feet (1.5 m) behind the vehicle, and tell you how close these objects are from your rear bumper.

### ⚠ CAUTION:

**The Ultrasonic Rear Park Assist (URPA) system does not replace driver vision. URPA does not:**

- **Operate above speeds of 3 mph (5 km/h).**
- **Detect objects more than 5 feet (1.5 meters) behind the vehicle. This distance may be less during warmer or humid weather.**
- **Detect objects that are below the bumper, underneath the vehicle, or that are very close to the vehicle.**
- **Detect children, pedestrians, bicyclists, or pets.**

**So if you do not use proper care before backing up, you could hit a vehicle, child, pedestrian, bicyclist, or pet, resulting in vehicle damage, injury, or death. Even though the vehicle has the URPA system, always check carefully before backing up by checking behind your vehicle.**



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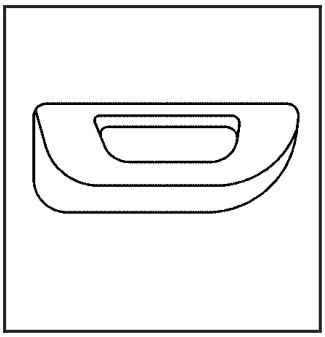

The URPA display is located inside the vehicle, above the liftgate glass. It has three color-coded lights that can be seen through the rearview mirror or by turning around.

## How the System Works

URPA comes on automatically when the shift lever is moved into REVERSE (R) and the vehicle speed is less than 3 mph (5 km/h). When the system turns on, the three lights on the display will illuminate for one and a half seconds to let you know that the system is working. If your vehicle is moving in REVERSE (R) at a speed greater than 3 mph (5 km/h), the red light will flash to remind you that the system does not work at a speed greater than 3 mph (5 km/h).

If an object is detected at a REVERSE (R) speed of less than 3 mph (5 km/h), one of the following will occur:

| Description | English | Metric |
|---|---|---|
| Amber light | 5 ft | 1.5 m |
| Amber/amber lights | 40 in | 1.0 m |
| Amber/amber/red lights & continuous chime | 20 in | 0.5 m |
| Amber/amber/red lights flashing & continuous chime | 1 ft | 0.3 m |

A chime will sound the first time an object is detected between 20 inches (0.5 m) and 5 feet (1.5 m) away.

URPA cannot detect objects that are above liftgate level. In order for the rear sensors to recognize an object, it must be within detection range behind the vehicle.



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### When the System Does Not Seem to Work Properly

The light may flash red when the vehicle is in REVERSE (R), if the ultrasonic sensors are not kept clean. So be sure to keep your rear bumper free of mud, dirt, snow, ice and slush. Other conditions that may affect system performance include things like the vibrations from a jackhammer or the compression of air brakes on a very large truck. If after cleaning the rear bumper and then driving forward at least 15 mph (25 km/h), the display continues to flash red, see your dealer.

If a trailer was attached to your vehicle, or a bicycle or an object was on the back of, or hanging out of your liftgate during your last drive cycle, the light may also flash red. The light will continue to flash whenever in REVERSE (R) until your vehicle is driven forward at least 15 mph (25 km/h) without any obstructions behind the vehicle.

For cleaning instructions, see *Washing Your Vehicle on page 447*.

## Accessory Power Outlet(s)

The accessory power outlets can be used to plug in electrical equipment such as a cellular telephone, CB radio, etc.

The vehicle has one outlet in front of the center console on the instrument panel and one in the rear compartment. Your vehicle may have one or two outlets in the rear of the center console.

There is a small cap that must be removed to access the accessory power outlet. When not using the outlet be sure to cover it with the protective cap.

***Notice:*** **Leaving electrical equipment plugged in for an extended period of time while the vehicle is off will drain the battery. Power is always supplied to the outlets. Always unplug electrical equipment when not in use and do not plug in equipment that exceeds the maximum 20 ampere rating.**



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Certain accessory power plugs may not be compatible to the accessory power outlet and could result in blown vehicle or adapter fuses. If you experience a problem, see your dealer for additional information on the accessory power outlets.

***Notice:*** **Adding any electrical equipment to your vehicle may damage it or keep other components from working as they should. The repairs would not be covered by your warranty. Do not use equipment exceeding maximum amperage rating of 20 amperes. Check with your dealer before adding electrical equipment.**

Follow the proper installation instructions that are included with any electrical equipment you install.

***Notice:*** **Improper use of the power outlet can cause damage not covered by your warranty. Do not hang any type of accessory or accessory bracket from the plug because the power outlets are designed for accessory power plugs only.**

## Ashtray(s) and Cigarette Lighter

Your vehicle may have an ashtray and cigarette lighter.

***Notice:*** **If you put papers, pins, or other flammable items in the ashtray, hot cigarettes or other smoking materials could ignite them and possibly damage your vehicle. Never put flammable items in the ashtray.**

### Ashtray

The ashtray is located under the climate control panel on the instrument panel. Press on the door to release the ashtray.

To empty the ashtray, remove it from the instrument panel by gripping the edges and pulling straight out. To reinstall, push the tray back into place.

There may also be ashtrays in the rear doors.



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## Cigarette Lighter

***Notice:*** **Holding a cigarette lighter in while it is heating does not let the lighter back away from the heating element when it is hot. Damage from overheating can occur to the lighter or heating element, or a fuse could be blown. Do not hold a cigarette lighter in while it is heating.**

The cigarette lighter is located next to the ashtray. The vehicle does not have any cigarette lighters for the rear seat passengers.

To activate the cigarette lighter, push it into the heating element and let go. When the lighter is ready it will pop back out by itself.

## Analog Clock

The analog clock is located on the instrument panel above the radio. The clock is not connected with any other vehicle system and runs by itself. To adjust the clock, do the following:

1. Locate the adjustment button directly below the clock face.
2. Push and hold the adjustment button to advance the clock hands. Holding the button down will cause the clock to advance faster. Release the button *before* you get to the desired time.
3. Push and release the button to increase the time by one minute increments until the desired time is reached.



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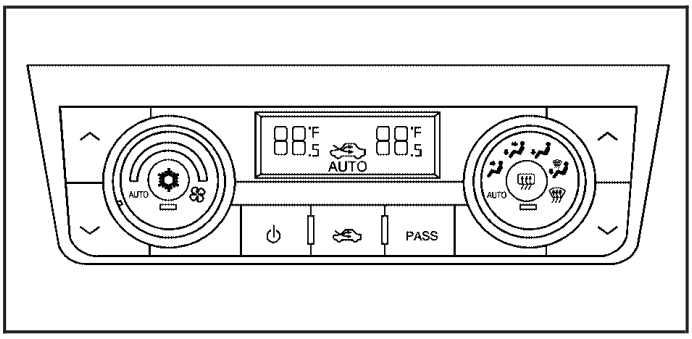
# Climate Controls

## Dual Climate Control System

With this system you can control the heating, cooling, defrosting, and ventilation for the vehicle.




**Dual Climate Control System**

### Automatic Operation

The climate control system automatically adjusts the air temperature, air delivery mode, fan speed, and air conditioning for best comfort in the vehicle.

To activate the automatic system:

**AUTO (Automatic Mode):**

1. Turn the fan and mode controls to the AUTO position. This also sets the recirculation mode to automatic operation on the display.
2. Press the up or down arrows to adjust the temperature to a comfortable setting between 70°F (21°C) and 80°F (27°C).
3. Allow the system time to stabilize. This might take several minutes in very hot or cold weather. Then adjust the temperature, as needed for best comfort.

   Choosing the coldest or warmest temperature setting will not cause the system to heat or cool any faster. In cold weather, the system starts at reduced fan speeds to avoid blowing cold air into the vehicle until warmer air is available. The automatic system starts out blowing air at the floor, but changes modes automatically as the vehicle warms up to maintain the chosen temperature setting.

   The length of time needed to warm the interior depends on the outside temperature and the amount of time that has passed since the vehicle was last driven.



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∧ ∨ **(Driver's Temperature Controls):** Press the up or down buttons closest to the driver to manually increase or decrease the temperature inside the vehicle.

∧ ∨ **(Passenger's Temperature Controls):** Press the up or down buttons closest to the passenger to manually increase or decrease the temperature for the front passenger. If the passenger's climate control system is off, pressing either of these buttons turns it on.

## Manual Operation

**(Fan):** Turn the left control to adjust the fan speed manually if the automatic setting is higher or lower than desired. The fan speed remains at this level until you return to AUTO or adjust to a different level. In the automatic position, the blower might go to a lower speed during an OnStar® session to limit the background noise.

To change the current mode, select one of the following positions using the right control:

**AUTO:** Turn the control to this position to turn on the automatic delivery mode operation.

**(Vent):** Turn the control to this position so that air is directed to the instrument panel outlets.

**(Bi-Level):** Turn the control to this position so that half of the air is directed to the instrument panel outlets and the other half goes to the floor outlets. The temperature of the air to the floor will be warmer than the air to the upper outlets.

**(Floor):** Turn the control to this position so that most of the air is directed to the floor outlets with some air directed to the outboard outlets, side window outlets, and defroster outlet.

**(Defog):** Turn the control to this position so that air is directed between the windshield and floor outlets, with some air going to the outboard outlets and side window outlets. More information of defogging can be found later in this section.



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**(Defrost):** Turn the control to this position so that most of the air is directed to the windshield with some air going to the side window outlets. More information on defrosting can be found later in this section.

**(On/Off):** Press this button to turn the climate control system on or off. While off, adjusting any button or control, except recirculation and rear window defog turns the system back on. The air inlets default to outside air when the climate control system is turned off.

**PASS (Passenger's Climate Control):** Press this button to turn the passenger's climate control system on or off. Then press the up or down buttons to choose the desired setting. Pressing the button again automatically sets the passengers temperature to the drivers setting. Turning the passenger's temperature display off does not turn off the climate control system for the passenger.

## Recirculation Operation

There are three options for bringing air into the climate control system. They are controlled by pressing the center button on the climate control panel. The climate control display indicates one of the following three modes:

**AUTO (Auto Air Inlet):** This mode lets the automatic climate control system choose the best air inlet position for cooling or warming the vehicle. To have full automatic climate control, the fan and mode controls must be set to the AUTO position. Generally, recirculation will only automatically be selected on hot days.

Your vehicle may have an optional Air Quality Sensor. To activate the air quality sensor, the auto air inlet setting must be used. For more information, see Air Quality Sensor found later in this section.



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**(Recirculation):** This mode recirculates air inside the vehicle and keeps outside air from coming into the vehicle. It can be used to help cool the vehicle more quickly or to prevent odors from entering the vehicle.

Recirculation is not available in the defrost mode. It is also cancelled when floor or defog mode is selected. In some conditions using recirculation for long periods of time can cause the air inside the vehicle to become too dry or stuffy. To prevent this from happening, after the air in the vehicle has cooled, select auto air inlet or outside air.

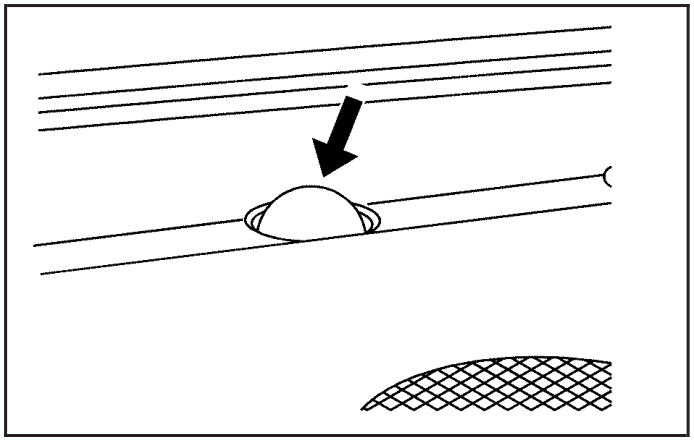
**(Outside Air):** This mode pulls fresh air from outside the vehicle. Outside air is always selected in defrost mode to prevent fogging.

## Air Conditioning

**(Air Conditioning):** Press this button to turn the air conditioning on or off, and override the automatic system. When selecting the AUTO fan or AUTO mode, the air conditioning compressor comes on automatically, as necessary.

The air conditioning system removes moisture from the air, so you might notice water dripping underneath the vehicle while idling or after turning off the engine. This is normal.

## Sensors



There is a solar sensor located on top of the instrument panel, near the windshield.



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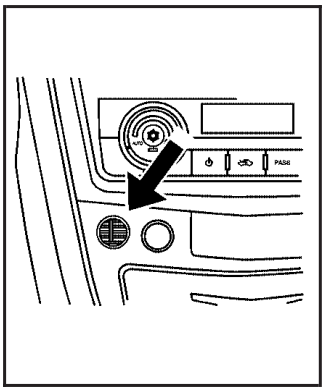

There is also an interior temperature sensor located below the climate control system next to the steering wheel.

There is also an ambient sensor located behind the grille in front of the vehicle.

These sensors help the climate control system automatically control the temperature setting. The system can supply cooler air to the side of the vehicle facing the sun. The recirculation mode will also be used as needed to maintain cool outlet temperatures.

Do not cover any of the sensors or the climate control system might not work properly.

## Defogging and Defrosting

Fog on the inside of windows is a result of high humidity (moisture) condensing on the cool window glass. This can be minimized if the climate control system is used properly. There are two modes to clear fog from the windshield.

**(Floor/Defog):** Use this mode to clear the windows of fog and warm the passengers. The system turns off recirculation and runs the air conditioning compressor unless the outside temperature is at or below freezing. If recirculation mode is selected while using the defog mode, the system recirculates air initially but returns to the fresh air mode after 10 minutes.

**(Defrost):** Use this mode to remove fog or frost from the windshield more quickly. When selected, the system turns off recirculation and runs the air conditioning compressor, unless the outside temperature is at or below freezing.

Do not drive the vehicle until all the windows are clear.



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## Rear Window Defogger

The rear window defogger uses a warming grid to remove fog or frost from the rear window.

**(Rear Defogger):** Press the center of the right control to turn the rear window defogger on or off. Be sure to clear as much snow from the rear window as possible. The rear window defogger turns off about 20 minutes after the button is first pressed if the vehicle is moving at slower speeds. At higher vehicle speeds, the rear defogger can stay on continuously. Each additional press runs the defogger for about 10 minutes.

The heated outside rearview mirrors also heat to help clear fog or frost from the surface of the mirror when the rear window defogger is on.

***Notice:*** **Do not use a razor blade or sharp object to clear the inside rear window. Do not adhere anything to the defogger grid lines in the rear glass. These actions may damage the rear defogger. Repairs would not be covered by your warranty.**

## Outlet Adjustment

Use the knobs located in the center of each outlet to change the direction of the airflow. Use the thumbwheels to open or close the outlets.

### Operation Tips

- Clear away any ice, snow, or leaves from the air inlets at the base of the windshield that could block the flow of air into the vehicle.
- Use of non-GM approved hood deflectors may adversely affect the performance of the system.
- Keep the path under the front seats clear of objects to help circulate the air inside of the vehicle more effectively.
- If the airflow seems low when the fan speed is at the highest setting, the passenger compartment air filter might need to be replaced. For more information, see *Passenger Compartment Air Filter on page 195*.
- Set the climate control system to AUTO fan and mode and then adjust the temperature setting up or down a few degrees for best comfort.



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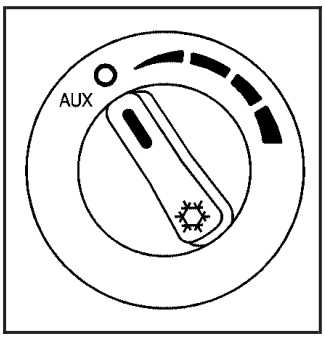
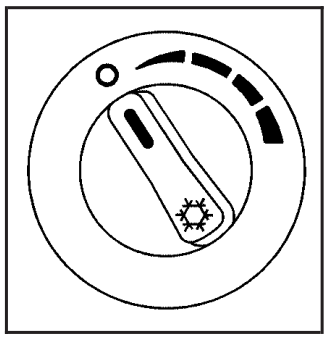
## Rear Air Conditioning System

If your vehicle has the rear air conditioning system it has two fan speed selectors. One fan speed selector is located in the front overhead console and the other is located in the headliner above the second row seats. The rear air conditioning system is designed to provide cooled air only.




**Front Control**



**Rear Control**

To operate the rear system using the front control, just turn the knob to the fan position you want.

To use the rear control, first turn the front control to AUX, then the rear control can be used to increase and decrease the airflow.

## Passenger Compartment Air Filter

The passenger compartment air filter helps remove dust and pollen from the air entering the vehicle. Like the vehicle's engine air cleaner/filter, it needs to be changed periodically. For how often to change the passenger compartment air filter, see *Scheduled Maintenance on page 471*.

The passenger compartment air filter is located underneath the hood below the windshield wiper arm on the passenger's side of the vehicle. See *Engine Compartment Overview on page 356* for more information on location.



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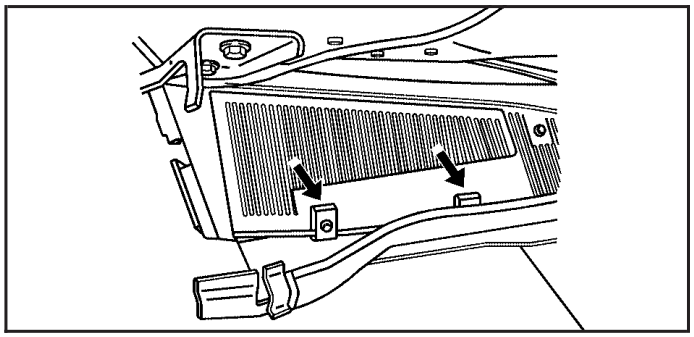
Use the procedure listed below to replace the passenger compartment air filter:

1. Open the hood to access the engine compartment. See *Hood Release on page 355* for more information. Locate the passenger compartment air filter access panel door.



2. Push the two tabs on the access panel door towards the windshield.
3. While pressing forward, lift the access panel out of the clipped position and pull towards the front of the vehicle. This releases the clips and allows the panel door to be removed.
4. Remove the old filter and insert a new one. Make sure the arrow on the filter is pointing toward the passenger compartment.

   See *Normal Maintenance Replacement Parts on page 482* for the correct part number for the filter.
5. Reverse Steps 1 through 3 to reinstall the cover.



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# Warning Lights, Gages, and Indicators

This part describes the warning lights and gages that may be on your vehicle. The pictures will help you locate them.

Warning lights and gages can signal that something is wrong before it becomes serious enough to cause an expensive repair or replacement. Paying attention to the warning lights and gages could also save you or others from injury.

Warning lights come on when there may be or is a problem with one of your vehicle's functions. As you will see in the details on the next few pages, some warning lights come on briefly when you start the engine just to let you know they are working. If you are familiar with this section, you should not be alarmed when this happens.

Gages can indicate when there may be or is a problem with one of your vehicle's functions. Often gages and warning lights work together to let you know when there is a problem with your vehicle.

When one of the warning lights comes on and stays on while you are driving, or when one of the gages shows there may be a problem, check the section that tells you what to do about it. Waiting to do repairs can be costly – and even dangerous. So please get to know your warning lights and gages. They are a big help.

Your vehicle also has a Driver Information Center (DIC) that works along with the warning lights and gages. See *Driver Information Center (DIC) on page 214* for more information.



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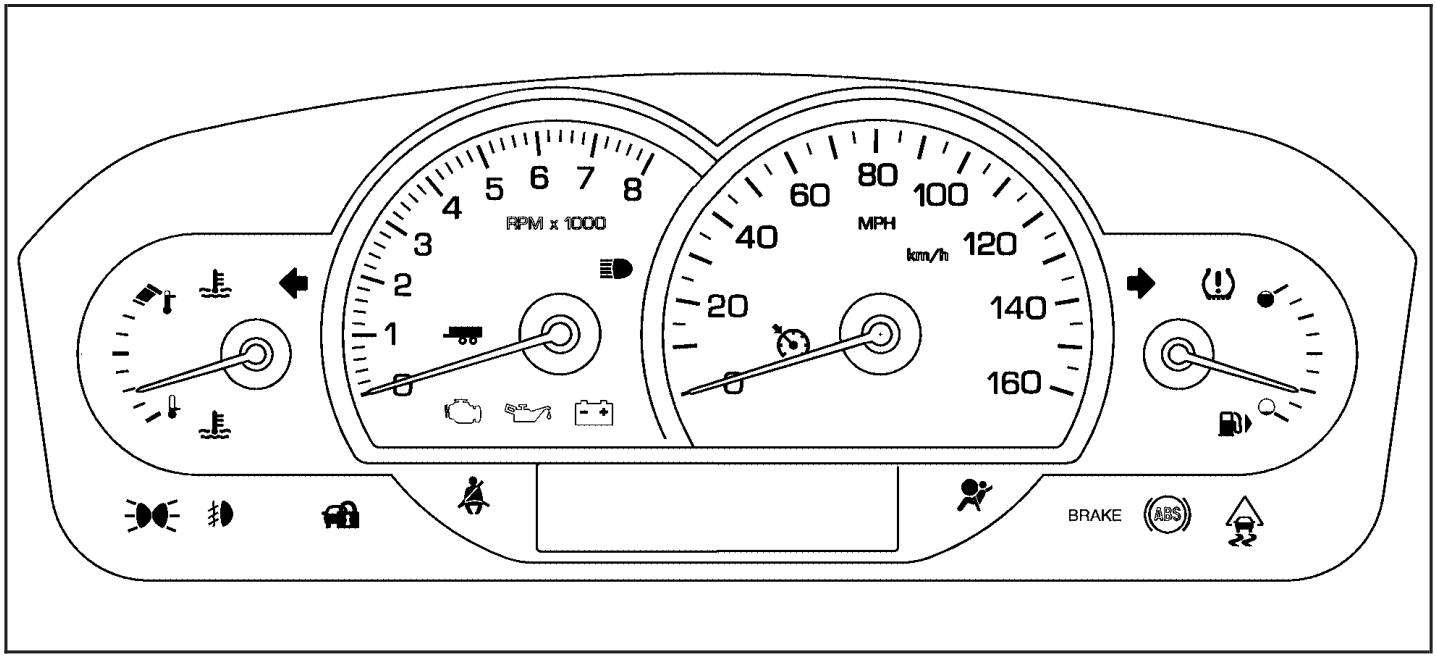
## Instrument Panel Cluster

The instrument panel cluster is designed to let you know at a glance how your vehicle is running. You will know how fast you are going, how much fuel you are using and many of the other things you will need to know to drive safely and economically.




**United States version shown, Canada similar**



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## Speedometer and Odometer

The speedometer lets you see your speed in both miles per hour (mph) and kilometers per hour (km/h). See “SPEEDOMETER” under *DIC Controls and Displays on page 215* for more information.

The odometer mileage can be checked without the vehicle running. Your vehicle’s odometer works together with the driver information center. You can set a Trip A and a Trip B odometer. See “Trip Fuel” under *DIC Controls and Displays on page 215* for more information.

If your vehicle ever needs a new odometer installed, the new one will be set to the correct mileage total of the old odometer.

## Tachometer

This gage indicates the engine speed in revolutions per minute (rpm).

## Engine Speed Limiter

This feature prevents the engine from operating at too many revolutions per minute (rpm). When the engine’s rpms are too high, the throttle is closed to reduce speed. If this is not sufficient, then the fuel supply to the engine will be limited. When the rpms return to normal, the fuel supply will return to normal. This helps prevent damage to the engine.



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## Safety Belt Reminder Light

When the key is turned to ON or START, a chime will come on for several seconds to remind people to fasten their safety belts, unless the driver's safety belt is already buckled.

The safety belt light will also come on and stay on for several seconds, then it will flash for several more.

This chime and light will be repeated if the driver remains unbuckled and the vehicle is in motion.

If the driver's belt is already buckled, neither the chime nor the light will come on.

## Passenger Safety Belt Reminder Light

Several seconds after the key is turned to ON or START, a chime will sound for several seconds to remind the front passenger to buckle their safety belt. This would only occur if the passenger airbag is enabled. See *Passenger Sensing System on page 81* for more information. The passenger safety belt light will also come on and stay on for several seconds, then it will flash for several more.

This chime and light will be repeated if the passenger remains unbuckled and the vehicle is in motion.

If the passenger's safety belt is buckled, neither the chime nor the light will come on.



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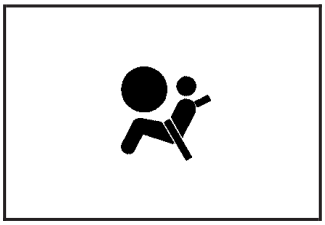
## Airbag Readiness Light

There is an airbag readiness light on the instrument panel cluster, which shows the airbag symbol. The system checks the airbag's electrical system for malfunctions. The light tells you if there is an electrical problem. The system check includes the airbag sensors, the airbag modules, the wiring and the diagnostic module. For more information on the airbag system, see *Airbag System on page 70*.



This light will come on when the ignition key is turned to ON and it will flash for a few seconds.

Then the light should go out. This means the system is ready. If it does not go out, have your vehicle serviced right away.

If the airbag readiness light stays on after you start the vehicle or comes on while you are driving, your airbag system may not work properly. Have your vehicle serviced right away.

### ⚠ CAUTION:

**If the airbag readiness light stays on after you start your vehicle, it means the airbag system may not be working properly. The airbags in your vehicle may not inflate in a crash, or they could even inflate without a crash. To help avoid injury to yourself or others, have your vehicle serviced right away if the airbag readiness light stays on after you start your vehicle.**

If there is a problem with the airbag system in your vehicle, the SERVICE AIR BAG message will appear on the Driver Information Center (DIC) display. See *DIC Warnings and Messages on page 220* for more information.



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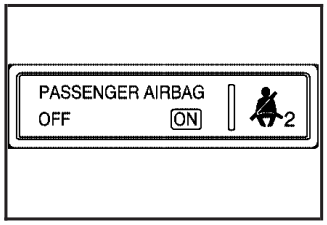
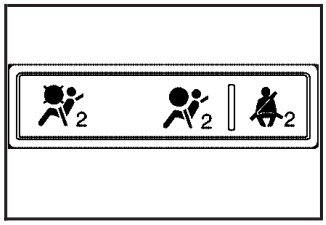
## Passenger Airbag Status Indicator

Your vehicle has the passenger sensing system. Your instrument panel has a passenger airbag status indicator.




**United States**



**Canada**

When the ignition key is turned to ON or START, the passenger airbag status indicator will light ON and OFF, or the symbol for on and off, for several seconds as a system check. If you use remote start to start your vehicle, if you have this feature, you may not see the system check. Then, after several more seconds, the status indicator will light either ON or OFF, or either the on or off symbol to let you know the status of the right front passenger's frontal airbag.

If the word ON or the on symbol is lit on the passenger airbag status indicator, it means that the right front passenger's frontal airbag is enabled (may inflate).

### ⚠ CAUTION:

**If the on indicator comes on when you have a rear-facing child restraint installed in the right front passenger's seat, it means that the passenger sensing system has not turned off the passenger's frontal airbag. A child in a rear-facing child restraint can be seriously injured or killed if the right front passenger's airbag inflates. This is because the back of the rear-facing child restraint would be very close to the inflating airbag. Do not use a rear-facing child restraint in the right front passenger's seat if the airbag is turned on.**



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Your vehicle has a rear seat that will accommodate a rear-facing child restraint. A label on your sun visor says, “Never put a rear-facing child seat in the front.” This is because the risk to the rear-facing child is so great, if the airbag deploys.

**⚠ CAUTION:**

**Even though the passenger sensing system is designed to turn off the passenger’s frontal airbag if the system detects a rear-facing child restraint, no system is fail-safe, and no one can guarantee that an airbag will not deploy under some unusual circumstance, even though it is turned off. We recommend that rear-facing child restraints be secured in the rear seat, even if the airbag is off.**

If the word OFF or the off symbol is lit on the airbag status indicator, it means that the passenger sensing system has turned off the right front passenger’s frontal airbag. See *Passenger Sensing System on page 81* for more on this, including important safety information.

If, after several seconds, all status indicator lights remain on, or if there are no lights at all, there may be a problem with the lights or the passenger sensing system. See your dealer for service.

**⚠ CAUTION:**

**If the off indicator and the airbag readiness light ever come on together, it means that something may be wrong with the airbag system. If this ever happens, have the vehicle serviced promptly, because an adult-size person sitting in the right front passenger seat may not have the protection of the frontal airbag. See *Airbag Readiness Light on page 201*.**



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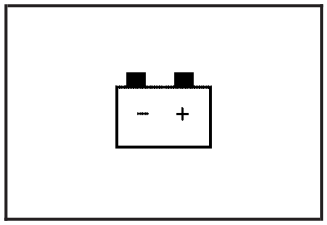
## Charging System Light



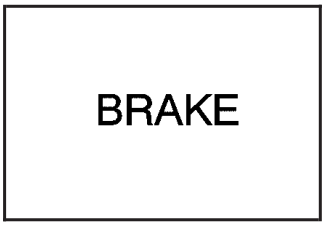

This light will come on briefly when the ignition is turned to ON to show that it is working.

It should turn off once the engine is running. If it stays on, or comes on while you are driving, you may have a problem with the charging system. It could indicate that there is a problem with the generator, generator drive belt or another electrical problem. Have is checked right away. Driving while this light is on could drain your battery. If you must drive a short distance with the light on, be certain to turn off all unnecessary accessories, such as the radio and air conditioner.

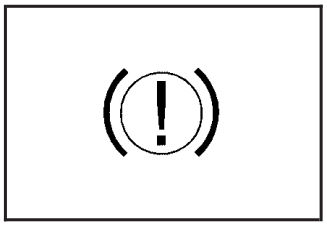
## Brake System Warning Light

Your vehicle's hydraulic brake system is divided into two parts. If one part is not working, the other part can still work and stop you. For good braking, though, you need both parts working well.

If the warning light comes on, there is a brake problem. Have your brake system inspected right away.




**United States**



**Canada**

This light should come on briefly when you turn the ignition key to ON. If it does not come on then, have it fixed so it will be ready to warn you if there is a problem.



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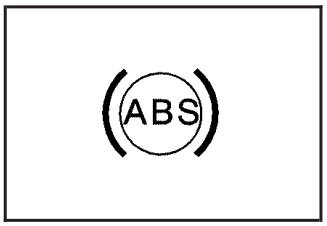
When the ignition is on, the brake system warning light will also come on when you set your parking brake. The light will stay on if your parking brake does not release fully. If it stays on after your parking brake is fully released, it means you have a brake problem.

If the light comes on while you are driving, pull off the road and stop carefully. You may notice that the pedal is harder to push, or the pedal may go closer to the floor. It may take longer to stop. If the light is still on, have the vehicle towed for service. See *Towing Your Vehicle on page 328*.

**⚠ CAUTION:**

**Your brake system may not be working properly if the brake system warning light is on. Driving with the brake system warning light on can lead to an accident. If the light is still on after you have pulled off the road and stopped carefully, have the vehicle towed for service.**

## Anti-Lock Brake System Warning Light




With the Anti-Lock Brake System (ABS), the light will come on when your engine is started and stay on for several seconds. This is normal.

If the ABS warning light comes on and stays on, there may be a problem with the anti-lock portion of the brake system. If the brake system warning light is not on, you still have brakes, but you do not have anti-lock brakes. See *Brake System Warning Light on page 204* for more information.

If the light stays on, turn the ignition to OFF. If the light comes on when you are driving, stop as soon as possible and turn the ignition off. Then start the engine again to reset the system. If the light still stays on, or comes on again while you are driving, your vehicle needs service.



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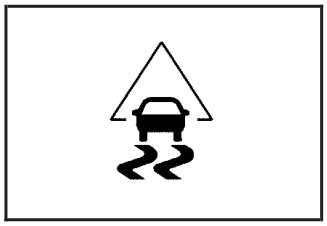
If the regular brake system warning light is not on, you still have brakes, but you do not have anti-lock brakes. If the regular brake system warning light is also on, you do not have anti-lock brakes and there is a problem with your regular brakes. See *Brake System Warning Light on page 204* for more information.

The ABS warning light should come on briefly when you turn the ignition key to ON. If the light does not come on then, have it fixed so it will be ready to warn you if there is a problem.

## Traction Control System (TCS) Warning Light

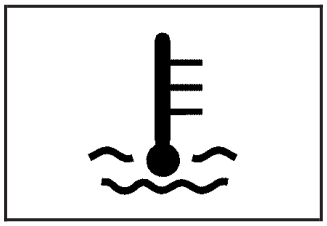


Your vehicle has a traction control system warning light.

This light will come on when your traction control system is limiting wheel spin. You may feel or hear the system working, but this is normal.

If the traction control system warning light comes on and stays on for an extended period of time when the system is turned on, your vehicle needs service. See *Traction Control System (TCS) on page 281* for more information.

## Engine Coolant Temperature Warning Light



This light tells you that your engine is very hot.

This light will come on when you first start the vehicle as a check to let you know that the light is working. It will go out after a few seconds. If the light does not come on, the bulb may be burned out. See your dealer to have it corrected.

If the light does not go out or if the light comes on and stays on while you are driving, your vehicle may have a problem with the cooling system.



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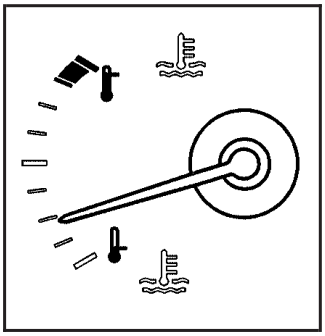
You should stop the vehicle and turn off the engine as soon as possible to avoid damage to the engine. A warning chime will sound when this light is on, also.

See *Engine Overheating on page 372*.

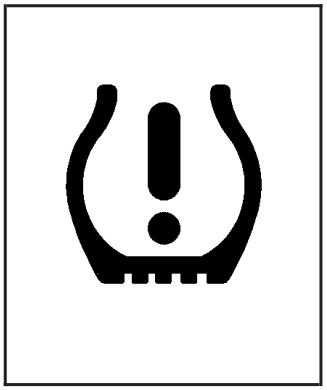
## Engine Coolant Temperature Gage



This gage shows the engine coolant temperature.

It can be used to see when your engine has warmed up and to make sure your cooling system is operating properly. If the gage pointer moves into the shaded area, the engine coolant is too hot and the engine coolant temperature warning light will come on. See *Engine Overheating on page 372* for more information.

## Tire Pressure Light



If your vehicle has this light, it will come on briefly when you turn the ignition on.

This light will also come on when one or more of your tires are significantly underinflated.

A CHECK TIRE PRESSURE DIC message will accompany the light, see *DIC Warnings and Messages on page 220*

Stop and check your tires as soon as it is safe to do so. If underinflated, inflate to the proper pressure. See *Tires on page 398* for more information.



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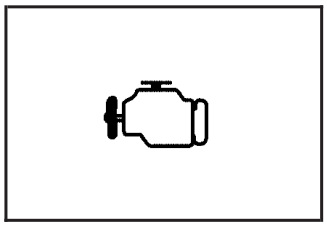
This light will flash for approximately 60 seconds and then turn on solid if a problem is detected with the Tire Pressure Monitor system.

See *Tire Pressure Monitor System on page 410* for more information.

## Malfunction Indicator Lamp

### Check Engine Light



Your vehicle has a computer which monitors operation of the fuel, ignition, and emission control systems.

This system is called OBD II (On-Board Diagnostics-Second Generation) and is intended to assure that emissions are at acceptable levels for the life of the vehicle, helping to produce a cleaner environment.

The check engine light comes on to indicate that there is a problem and service is required. Malfunctions often will be indicated by the system before any problem is apparent. This may prevent more serious damage to your vehicle. This system is also designed to assist your service technician in correctly diagnosing any malfunction.

***Notice:*** **If you keep driving your vehicle with this light on, after awhile, the emission controls might not work as well, your vehicle's fuel economy might not be as good, and the engine might not run as smoothly. This could lead to costly repairs that might not be covered by your warranty.**

***Notice:*** **Modifications made to the engine, transmission, exhaust, intake, or fuel system of your vehicle or the replacement of the original tires with other than those of the same Tire Performance Criteria (TPC) can affect your vehicle's emission controls and can cause this light to come on. Modifications to these systems could lead to costly repairs not covered by your warranty. This could also result in a failure to pass a required Emission Inspection/Maintenance test. See *Accessories and Modifications on page 347*.**



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This light should come on, as a check to show you it is working, when the ignition is on and the engine is not running. If the light does not come on, have it repaired. This light will also come on during a malfunction in one of two ways:

- **Light Flashing** — A misfire condition has been detected. A misfire increases vehicle emissions and may damage the emission control system on your vehicle. Diagnosis and service may be required.
- **Light On Steady** — An emission control system malfunction has been detected on your vehicle. Diagnosis and service may be required.

## If the Light is Flashing

The following may prevent more serious damage to your vehicle:

- Reducing vehicle speed
- Avoiding hard accelerations
- Avoiding steep uphill grades
- If you are towing a trailer, reduce the amount of cargo being hauled as soon as it is possible

If the light stops flashing and remains on steady, see “If the Light Is On Steady” following.

If the light continues to flash, when it is safe to do so, stop the vehicle. Find a safe place to park your vehicle. Turn the key off, wait at least 10 seconds and restart the engine. If the light remains on steady, see “If the Light Is On Steady” following. If the light is still flashing, follow the previous steps, and see your dealer for service as soon as possible.

## If the Light Is On Steady

You may be able to correct the emission system malfunction by considering the following:

Did you recently put fuel into your vehicle?

If so, reinstall the fuel cap, making sure to fully install the cap. See *Filling the Tank on page 352*. The diagnostic system can determine if the fuel cap has been left off or improperly installed. A loose or missing fuel cap will allow fuel to evaporate into the atmosphere. A few driving trips with the cap properly installed should turn the light off.



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Did you just drive through a deep puddle of water?

If so, your electrical system may be wet. The condition will usually be corrected when the electrical system dries out. A few driving trips should turn the light off.

Have you recently changed brands of fuel?

If so, be sure to fuel your vehicle with quality fuel. See *Gasoline Octane on page 349*. Poor fuel quality will cause your engine not to run as efficiently as designed. You may notice this as stalling after start-up, stalling when you put the vehicle into gear, misfiring, hesitation on acceleration, or stumbling on acceleration. (These conditions may go away once the engine is warmed up.) This will be detected by the system and cause the light to turn on.

If you experience one or more of these conditions, change the fuel brand you use. It will require at least one full tank of the proper fuel to turn the light off.

If none of the above steps have made the light turn off, your dealer can check the vehicle. Your dealer has the proper test equipment and diagnostic tools to fix any mechanical or electrical problems that may have developed.

## Emissions Inspection and Maintenance Programs

Some state/provincial and local governments have or may begin programs to inspect the emission control equipment on your vehicle. Failure to pass this inspection could prevent you from getting a vehicle registration.

Here are some things you need to know to help your vehicle pass an inspection:

Your vehicle will not pass this inspection if the check engine light is on or not working properly.

Your vehicle will not pass this inspection if the OBD (on-board diagnostic) system determines that critical emission control systems have not been completely diagnosed by the system. The vehicle would be considered not ready for inspection. This can happen if you have recently replaced your battery or if your battery has run down. The diagnostic system is designed to evaluate critical emission control systems during normal driving. This may take several days of routine driving. If you have done this and your vehicle still does not pass the inspection for lack of OBD system readiness, your dealer can prepare the vehicle for inspection.



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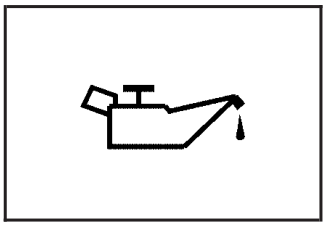
## Oil Pressure Light

**⚠ CAUTION:**

**Do not keep driving if the oil pressure is low. If you do, your engine can become so hot that it catches fire. You or others could be burned. Check your oil as soon as possible and have your vehicle serviced.**

***Notice:*** **Lack of proper engine oil maintenance may damage the engine. The repairs would not be covered by your warranty. Always follow the maintenance schedule in this manual for changing engine oil.**



If equipped, this light tells you if there could be a problem with your engine oil pressure.

The light goes on when you turn your key to ON or START. It goes off once you start your engine. That's a check to be sure the light works. If it doesn't come on, be sure to have it fixed so it will be there to warn you if something goes wrong.

When the light comes on and stays on, it means that oil isn't flowing through your engine properly. You could be low on oil and you might have some other system problem.



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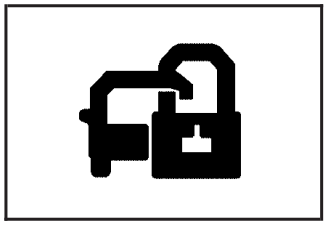
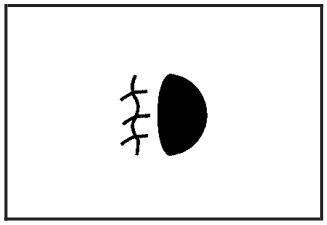
## Security Light



For information regarding this light, see *Theft-Deterrent System on page 112*.

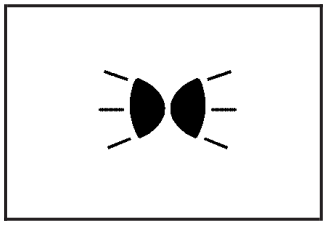
## Fog Lamp Light



The fog lamps light will come on when the fog lamps are in use.

The light will go out when the fog lamps are turned off. See *Fog Lamps on page 181* for more information.

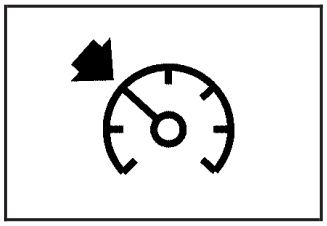
## Lights On Reminder



This light comes on whenever the parking lamps are on.

See *Headlamps on Reminder on page 179* for more information.

## Cruise Control Light



This light comes on whenever you set the cruise control.

The light goes out when the cruise control is turned off. See *Cruise Control on page 174* for more information.



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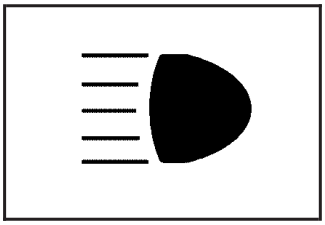
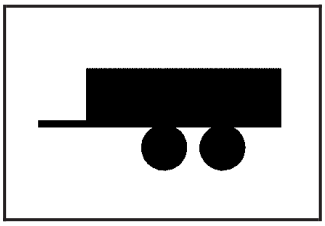
## Highbeam On Light



This light comes on whenever the high-beam headlamps are on.

See *Headlamp High/Low-Beam Changer on page 169* for more information.

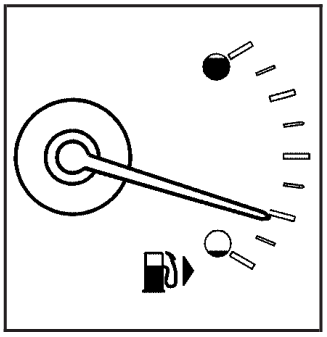
## Tow/Haul Mode Light



This light comes on when the Tow/Haul mode has been activated.

For more information, see *Tow/Haul Mode on page 126*.

## Fuel Gage



The fuel gage shows approximately how much fuel is in the fuel tank. It works only when the engine is on.

If the fuel supply gets low, the “FUEL LEVEL LOW” message will appear on the Driver Information Center (DIC) and a single chime will sound. See *DIC Warnings and Messages on page 220* for more information.



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All of the following situations are normal and do not indicate that anything is wrong with the fuel gage:

- At the gas station the gas pump shuts off before the gage reads full.
- The gage may change when you turn, stop quickly or accelerate quickly.
- It takes a little more or less fuel to fill the tank than the gage indicated. For example, the gage may have indicated that the tank was half full, but it actually took a little more or less than half the tank's capacity to fill the tank.

## Driver Information Center (DIC)

The Driver Information Center (DIC) gives you the status of many of your vehicle's systems. The DIC is also used to display warning/status messages. All messages will appear in the DIC display located at the bottom of the instrument panel cluster, below the tachometer and speedometer. The DIC buttons are located on the instrument panel, to the left of the steering wheel.

The DIC comes on when the ignition is on. After a short delay, the DIC will display the information that was last displayed before the engine was turned off.

The top line of the DIC display shows the vehicle system information and the warning/status messages. The bottom line of the DIC display shows the odometer on the left side, the outside air temperature on the right side, and the shift position indicator in the center. For more information on the shift position indicator, see *Automatic Transmission Operation on page 122*.



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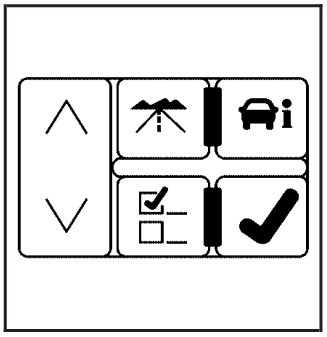
When the sport mode is active, an S will appear next to the shift position indicator on the center of the DIC display. When the manual mode is active, an M will appear on the DIC display. When the normal mode is active, only the shift position indicator will appear. While the Driver Shift Control (DSC) feature is active, the DIC will change to show the selected gear. See ″Driver Shift Control (DSC)″ under *Automatic Transmission Operation on page 122* for more information.

If a problem is detected, a warning message will appear on the display. Be sure to take any message that appears on the display seriously and remember that clearing the message will only make the message disappear, not correct the problem.

## DIC Controls and Displays



The Driver Information Center (DIC) has different displays which can be accessed by pressing the DIC buttons located on the instrument panel, to the left of the steering wheel.

**Trip/Fuel:** Press this button to scroll through the trip and fuel displays. See “Trip/Fuel Display Menu Items” following for more information on these displays.

**Vehicle Information:** Press this button to scroll through the vehicle information displays. See “Vehicle Information Display Menu Items” following for more information on these displays.



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**Customization:** Press this button to scroll through each of the customization features. See *DIC Vehicle Customization on page 231* for more information on the customization features.

**Set/Reset:** Press this button to reset certain DIC features and to acknowledge DIC warning messages and clear them from the DIC display.

**Menu Up/Down:** Press this button to scroll up and down the menu items.

## Trip/Fuel Display Menu Items

**(Trip/Fuel):** The following display menu items can be displayed by pressing the trip/fuel button:

### TRIP A or TRIP B

These displays show the current distance traveled since the last reset for each trip odometer in either miles (mi) or kilometers (km). Both odometers can be used at the same time. Each trip odometer can be reset to zero separately by pressing and holding the set/reset button for a few seconds while the desired trip odometer is displayed.

### FUEL RANGE

This display shows the approximate number of remaining miles (mi) or kilometers (km) you can drive without refilling your fuel tank. This estimate is based on the current driving conditions and will change if the driving conditions change. For example, if you are driving in traffic and making frequent stops, the display may read one number, but if you enter the freeway, the number may change even though you still have the same amount of fuel in the fuel tank. This is because different driving conditions produce different fuel economies. Generally, freeway driving produces better fuel economy than city driving.

Once the range drops below about 30 miles (48 km) remaining, the display will show FUEL RANGE LOW.

If your vehicle is low on fuel, the FUEL LEVEL LOW message will be displayed. See “FUEL LEVEL LOW” under *DIC Warnings and Messages on page 220* for more information.



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## AVERAGE ECONOMY (AFE)

This display shows the approximate average miles per gallon (mpg) or liters per 100 kilometers (L/100 km). This number is calculated based on the number of mpg (L/100 km) recorded since the last time this display was reset. To reset this display, press the set/reset button. The display will return to zero.

## INST (Instantaneous) ECONOMY (IFE)

This display shows the current fuel economy in either miles per gallon (mpg) or liters per 100 kilometers (L/100 km). This number reflects only the fuel economy that the vehicle has right now and will change frequently as driving conditions change. Unlike average economy, this display cannot be reset.

## FUEL USED

This display shows the number of gallons (gal) or liters (L) of fuel used since the last reset of this display. To reset this display, press the set/reset button. The display will return to zero.

## TIMER ON/OFF

This display can be used like a stopwatch. You can record the time it takes to travel from one point to another. To access the timer, press the trip/fuel button until 00:00:00 TIMER OFF displays.

To turn on the timer, press the set/reset button until TIMER ON displays. The timer will then start.

To turn off the timer, press the set/reset button again until TIMER OFF displays. The timer will stop and display the end timing value.

To reset the timer, press and hold the set/reset button after the timer has been stopped. The display will return to zero.

## AVERAGE SPEED

This display shows the average speed of the vehicle in either miles per hour (mph) or kilometers per hour (km/h). This average is calculated based on the various vehicle speeds recorded since the last reset of this display. To reset this display, press the set/reset button. The display will return to zero.



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### BATTERY VOLTAGE

This display shows the current battery voltage. Your vehicle's charging system regulates voltage based on the state of the battery. The battery voltage may fluctuate when viewing this information on the DIC. This is normal.

If there is a problem with the battery charging system, the charging system light will illuminate and/or the DIC will display a message. See *Charging System Light on page 204*, *DIC Warnings and Messages on page 220* and *Electric Power Management on page 183* for more information.

### Blank Display

This display shows no information.

## Vehicle Information Display Menu Items

**(Vehicle Information):** The following display menu items can be displayed by pressing the vehicle information button:

### OIL LIFE REMAINING

If the vehicle has this display, it shows the estimated oil life remaining. If you see 99% OIL LIFE REMAINING on the display, that means that 99% of the current oil life remains.

When the oil life is depleted, the CHANGE ENGINE OIL SOON message will appear on the display. You should change your oil as soon as possible. In addition to the engine oil life system monitoring the oil life, additional maintenance is recommended in the Maintenance Schedule in this manual. See *Scheduled Maintenance on page 471* and *Engine Oil on page 360*.

Remember, you must reset the OIL LIFE yourself after each oil change. It will not reset itself. Also, be careful not to reset the OIL LIFE accidentally at any time other than when the oil has just been changed. It cannot be reset accurately until the next oil change. To reset the engine oil life system, See *Engine Oil Life System on page 363*. The display will show 100% when the system is reset.



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## UNITS

This display allows you to select between English or Metric units of measurement. Once in this display, press the set/reset button to select between ENGLISH or METRIC units.

## PARKING ASSIST

If your vehicle has the Ultrasonic Rear Parking Assist (URPA) system, this display allows the system to be turned on or off. Once in this display, press the set/reset button to select between ON or OFF. If you choose ON, the system will be turned on. If you choose OFF, the system will be turned off. The URPA system automatically turns back on after each vehicle start. When the URPA system is turned off and the vehicle is shifted out of PARK (P), the DIC will display the PARKING ASSIST OFF message as a reminder that the system has been turned off. See *DIC Warnings and Messages on page 220* and *Ultrasonic Rear Parking Assist (URPA) on page 184* for more information.

## FRONT TIRES or REAR TIRES

If your vehicle has a Tire Pressure Monitor (TPM) system, the pressure for each tire can be viewed in the DIC. The tire pressure will be shown in either pounds per square inch (psi) or kilopascals (kPa). Press the vehicle information button until the DIC shows the tire pressure for the front tires. Press the vehicle information button again to view the pressure for the rear tires.

If a low or high tire pressure condition is detected by the system while driving, a message advising you to check the pressure in a specific tire will appear in the display. See *Inflation - Tire Pressure on page 407* and *DIC Warnings and Messages on page 220* for more information.

## RELEARN TIRE POSITIONS

If your vehicle has a Tire Pressure Monitor (TPM) system, after rotating the tires or after replacing a tire or sensor, the system must re-learn the tire positions. To re-learn the tire positions, see *Tire Pressure Monitor System on page 410*. See *Tire Inspection and Rotation on page 414* and *DIC Warnings and Messages on page 220* for more information.



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### RELEARN REMOTE KEY

This display allows you to match the remote keyless entry transmitter to your vehicle. To match a remote keyless entry transmitter to your vehicle, do the following:

1. Press the vehicle information button until PRESS ✓ TO RELEARN REMOTE KEY displays.
2. Press the set/reset button.

   The message REMOTE KEY LEARNING ACTIVE will display.
3. Press and hold the lock and unlock buttons on the first transmitter at the same time for about 15 seconds.

   A chime will sound indicating that the transmitter is matched.
4. To match additional transmitters at this time, repeat Step 3.

   Each vehicle can have a maximum of eight transmitters matched to it.
5. To exit the programming mode, you must cycle the key to OFF.

### SPEEDOMETER

This display shows a digital speedometer in the DIC. The speed will be displayed in either miles per hour (mph) or kilometers per hour (km/h). Press the vehicle information button until the DIC shows the digital speedometer. To change the units from English to metric, see “UNITS” earlier in this section.

### Blank Display

This display shows no information.

## DIC Warnings and Messages

These messages appear if there is a problem detected in one of your vehicle’s systems.

You must acknowledge a message to clear it from the screen for further use. To clear a message, press the set/reset button.

Be sure to take any message that appears on the screen seriously and remember that clearing the message only makes the message disappear, not the problem.



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## AUTOMATIC LIGHT CONTROL OFF

This message displays when the automatic headlamps are turned off.

## AUTOMATIC LIGHT CONTROL ON

This message displays when the automatic headlamps are turned on.

## BATTERY SAVER ACTIVE

This message displays when the system detects that the battery voltage is dropping below expected levels. The battery saver system starts reducing certain features of the vehicle that you may be able to notice. At the point that the features are disabled, this message is displayed. It means that the vehicle is trying to save the charge in the battery.

Turn off all unnecessary accessories to allow the battery to recharge.

The normal battery voltage range is 11.5 to 15.5 volts. You can monitor battery voltage on the Driver Information Center (DIC) by pressing the trip/fuel button until BATTERY VOLTAGE is displayed.

## CHANGE ENGINE OIL SOON

When this message displays, it means that service is required for your vehicle. See your dealer. See *Engine Oil on page 360* and *Scheduled Maintenance on page 471* for more information.

When you reset the CHANGE ENGINE OIL SOON message by clearing it from the display, you still must reset the engine oil life system separately. For more information on resetting the engine oil life system, see *Engine Oil Life System on page 363*.

## CHECK TIRE PRESSURE

If your vehicle has a Tire Pressure Monitor (TPM) system, this message displays when the tire pressure in one of the tires needs to be checked. This message also displays LEFT FRONT, RIGHT FRONT, LEFT REAR, or RIGHT REAR to indicate which tire needs to be checked. You can receive more than one tire pressure message at a time. To read the other messages that may have been sent at the same time, press the set/reset button. If a tire pressure message appears on the DIC, stop as soon as you can. Have the tire pressures checked and set to those shown on the Tire Loading Information label.



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See *Tires on page 398*, *Loading Your Vehicle on page 322*, and *Inflation - Tire Pressure on page 407*. The DIC display also shows the tire pressure values for the front and rear tires by pressing the vehicle information button. See *DIC Controls and Displays on page 215*. If the tire pressure is low, the low tire pressure warning light comes on. See *Tire Pressure Light on page 207*.

## CRUISE SET TO XXX MPH (km/h)

This message displays whenever the cruise control is set. See *Cruise Control on page 174* for more information.

## DRIVER DOOR OPEN

This message displays when the driver's door is not closed completely. Make sure that the driver's door is closed completely.

## ENGINE HOT – A/C (Air Conditioning) OFF

This message displays when the engine coolant becomes hotter than the normal operating temperature. See *Engine Coolant Temperature Gage on page 207*. To avoid added strain on a hot engine, the air conditioning compressor automatically turns off. When the coolant temperature returns to normal, the air conditioning compressor turns back on. You can continue to drive your vehicle.

If this message continues to appear, have the system repaired by your dealer as soon as possible to avoid damage to the engine.

## ENGINE OVERHEATED IDLE ENGINE

***Notice:*** **If you drive your vehicle while the engine is overheating, severe engine damage may occur. If an overheat warning appears on the instrument panel cluster and/or DIC, stop the vehicle as soon as possible. Do not increase the engine speed above normal idling speed. See *Engine Overheating on page 372* for more information.**



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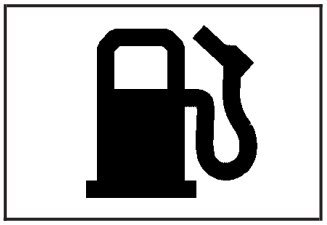
This message displays when the engine coolant temperature is too hot. Stop and allow the vehicle to idle until it cools down. See *Engine Coolant Temperature Warning Light on page 206*.

See *Overheated Engine Protection Operating Mode on page 374* for information on driving to a safe place in an emergency.

## ENGINE POWER REDUCED

This message displays when the engine power is being reduced to protect the engine from damage. There could be several malfunctions that might cause this message. Reduced engine power can affect the vehicle's ability to accelerate. If this message is on, but there is no reduction in performance, proceed to your destination. The performance may be reduced the next time the vehicle is driven. The vehicle may be driven at a reduced speed while this message is on, but acceleration and speed may be reduced. Anytime this message stays on, the vehicle should be taken to your dealer for service as soon as possible.

## FUEL LEVEL LOW



This symbol appears with this message.

This message displays when your vehicle is low on fuel. Refill the fuel tank as soon as possible. A single chime sounds when this message is displayed. See *Filling the Tank on page 352*.

## ICE POSSIBLE DRIVE WITH CARE

This message displays when the outside temperature is cold enough to create icy road conditions. Adjust your driving accordingly.

## LEFT REAR DOOR OPEN

This message displays when the driver's side rear door is not closed completely. Make sure that the door is closed completely.



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## OIL PRESSURE LOW STOP ENGINE

***Notice:*** **If you drive your vehicle while the engine oil pressure is low, severe engine damage may occur. If a low oil pressure warning appears on the instrument panel cluster and/or DIC, stop the vehicle as soon as possible. Do not drive the vehicle until the cause of the low oil pressure is corrected. See *Engine Oil on page 360* for more information.**

This message displays when the vehicle's engine oil pressure is low. The oil pressure light may also appear on the instrument panel cluster. See *Oil Pressure Light on page 211*.

A multiple chime sounds when this message is displayed. See *Engine Oil on page 360* for more information.

Stop the vehicle immediately, as engine damage can result from driving a vehicle with low oil pressure. Have the vehicle serviced by your dealer as soon as possible when this message is displayed.

## PARKING ASSIST OFF

If your vehicle has the Ultrasonic Rear Parking Assist (URPA) system, after the vehicle has been started, this message displays to reminder the driver that the URPA system has been turned off. Press the set/reset button to acknowledge this message and clear it from the DIC display. To turn the URPA system back on, see "PARKING ASSIST" under *DIC Controls and Displays on page 215*. See *Ultrasonic Rear Parking Assist (URPA) on page 184* for more information.

## PASSENGER DOOR OPEN

This message displays when the passenger's side front door is not closed completely. Make sure that the door is closed completely.

## REAR ACCESS OPEN

This message displays when the liftgate is not closed completely. Make sure that the liftgate is closed completely.



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## REMOTE KEY LEARNING ACTIVE

This message displays while you are matching a Remote Keyless Entry (RKE) transmitter to your vehicle. See “Matching Transmitter(s) to Your Vehicle” under *Remote Keyless Entry (RKE) System Operation on page 96* and *DIC Controls and Displays on page 215* for more information.

## REPLACE BATTERY IN REMOTE KEY

This message displays when the battery in your Remote Keyless Entry (RKE) transmitter needs to be replaced. To replace the battery, see “Battery Replacement” under *Remote Keyless Entry (RKE) System Operation on page 96*.

## RIGHT REAR DOOR OPEN

This message displays when the passenger’s side rear door is not closed completely. Make sure that the door is closed completely.

## SERVICE AIR BAG

This message displays when there is a problem with the airbag system. Have your vehicle serviced by your dealer immediately. See *Airbag Readiness Light on page 201* for more information.

## SERVICE A/C SYSTEM

This message displays when the air delivery mode door or the electronic sensors that control the air conditioning and heating systems are no longer working. Have the climate control system serviced by your dealer if you notice a drop in heating and air conditioning efficiency.

## SERVICE BATTERY CHARGING SYSTEM

This message displays when there is a problem with the generator and battery charging systems. Driving with this problem could drain the battery. Turn off all unnecessary accessories. Stop and turn off the vehicle as soon as it is safe to do so. Have the electrical system checked by your dealer. Under certain conditions, the charging system light may also turn on in the instrument panel cluster. See *Charging System Light on page 204* for more information.



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## SERVICE BRAKE ASSIST

This message displays if there is a problem with the brake system. The brake system warning light and the anti-lock brake system warning light may also display on the instrument panel cluster. See *Brake System Warning Light on page 204* and *Anti-Lock Brake System Warning Light on page 205* for more information. If this happens, stop as soon as possible and turn off the vehicle. Restart the vehicle and check for the message on the DIC display. If the message displays or appears again when you begin driving, the brake system needs service. See your dealer as soon as possible. See *Brakes on page 381* for more information.

## SERVICE BRAKE SYSTEM

This message displays, while the ignition is on, when the brake fluid level is low. The brake system warning light on the instrument panel cluster also comes on. See *Brake System Warning Light on page 204* for more information. Have the brake system serviced by your dealer as soon as possible.

## SERVICE PARKING ASSIST

If your vehicle has the Ultrasonic Rear Parking Assist (URPA) system, this message displays if there is a problem with the URPA system. Do not use this system to help you park. See *Ultrasonic Rear Parking Assist (URPA) on page 184* for more information. See your dealer for service.

## SERVICE POWER STEERING

Your vehicle may have a speed variable assist steering system. See *Steering on page 285*.

This message displays if a problem is detected with the speed variable assist steering system. When this message is displayed, you may notice that the effort required to steer the vehicle decreases or feels lighter, but you will still be able to steer the vehicle.



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## SERVICE STABILITRAK

This message displays if there has been a problem detected with the StabiliTrak® system.

If this message comes on while you are driving, pull off the road as soon as possible and stop carefully. Try resetting the system by turning the ignition off then back on. If this message still stays on or comes back on again while you are driving, your vehicle needs service. Have the StabiliTrak® system inspected by your dealer as soon as possible. See *StabiliTrak® System on page 283* for more information.

## SERVICE SUSPENSION SYS (System)

This message displays when the magnetic ride control or automatic leveling control system is not operating properly. Have your vehicle serviced by your dealer.

## SERVICE THEFT DETERRENT SYSTEM

This message displays when there is a problem with the theft-deterrent system programmed in the key. A fault has been detected in the system which means that the system is disabled and it is not protecting the vehicle. The vehicle usually restarts; however, you may want to take the vehicle to your dealer before turning off the engine. See *PASS-Key® III+ Operation on page 114* for more information.

## SERVICE TIRE MONITOR SYSTEM

If your vehicle has a Tire Pressure Monitor (TPM) system, this message displays if a part on the system is not working properly. If you drive your vehicle while any of the four sensors are missing or inoperable, the warning comes on in about 10 minutes. A sensor would be missing, for example, if you put different wheels on your vehicle without transferring the sensors. If the warning comes on and stays on, there may be a problem with the TPM. See your dealer.



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## SERVICE TRACTION CONTROL

This message displays when there is a problem with the Traction Control System (TCS). When this message displays, the system will not limit wheel spin. Adjust your driving accordingly. See your dealer for service. See *Traction Control System (TCS) on page 281* for more information.

## SERVICE TRANSMISSION

This message displays when there is a problem with the vehicle's transmission. Have your vehicle serviced by your dealer.

## SERVICE VEHICLE SOON

This message displays when a non-emissions related malfunction occurs. Have your vehicle serviced by your dealer as soon as possible.

## SPEED LIMITED TO XXX MPH (km/h)

This message displays when your vehicle speed is limited to 80 mph (128 km/h) because the vehicle detects a problem in the speed variable assist steering, magnetic ride control, or automatic leveling control systems. Have your vehicle serviced by your dealer.

## STABILITRAK NOT READY

This message may display and the Traction Control System and StabiliTrak® Warning Light on the instrument panel cluster may be on after first driving the vehicle and exceeding 19 mph (30 km/h) for 30 seconds. The StabiliTrak® system is not functional until the light has turned off. See *StabiliTrak® System on page 283* for more information.

## STABILITRAK OFF

This message displays when you turn off StabiliTrak®, or when the stability control has been automatically disabled. To limit wheel spin and realize the full benefits of the stability enhancement system, you should normally leave StabiliTrak® on. However, you should turn StabiliTrak® off if your vehicle gets stuck in sand, mud, ice, or snow and you want to rock your vehicle to attempt to free it, or if you are driving in extreme off-road conditions and require more wheel spin. See *If Your Vehicle is Stuck in Sand, Mud, Ice, or Snow on page 321*. To turn the StabiliTrak® system on or off, see *StabiliTrak® System on page 283*.



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There are several conditions that can cause this message to appear.

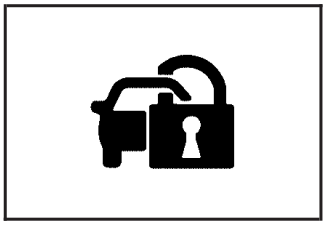
- One condition is overheating, which could occur if StabiliTrak® activates continuously for an extended period of time.
- The message also displays if the brake system warning light is on. See *Brake System Warning Light on page 204*.
- The message could display if the stability system takes longer than usual to complete its diagnostic checks due to driving conditions.
- The message displays if an engine or vehicle related problem has been detected and the vehicle needs service. See your dealer.

The message turns off as soon as the conditions that caused the message to be displayed are no longer present.

## STARTING DISABLED SERVICE THROTTLE

This message displays when your vehicle's throttle system is not functioning properly. Have your vehicle serviced by your dealer.

## THEFT ATTEMPTED



This symbol appears with this message.

This message displays if the theft-deterrent system has detected a break-in attempt while you were away from your vehicle. See *Theft-Deterrent System on page 112* for more information.



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## TIGHTEN GAS CAP

This message displays when the fuel cap has not been fully tightened. Recheck the fuel cap to ensure that it is on and tightened properly.

## TIRE LEARNING ACTIVE

If your vehicle has a Tire Pressure Monitor (TPM) system, this message displays when the system is re-learning the tire positions on your vehicle. See *Tire Pressure Monitor System on page 410*. The tire positions must be re-learned after rotating the tires or after replacing a tire or sensor. See *Tire Inspection and Rotation on page 414* and *Inflation - Tire Pressure on page 407* for more information.

## TRACTION CONTROL OFF

This message displays when the Traction Control System (TCS) is turned off. Adjust your driving accordingly. See *Traction Control System (TCS) on page 281* for more information.

## TRACTION CONTROL ON

This message displays when the Traction Control System (TCS) is turned on. See *Traction Control System (TCS) on page 281* for more information.

## TRANSMISSION HOT IDLE ENGINE

This message displays when the transmission fluid in your vehicle is too hot. Stop the vehicle and allow it to idle until the transmission cools down or until this message is removed.

## TURN SIGNAL ON

This message displays as a reminder to turn off the turn signal if you drive your vehicle for more than about 1 mile (1.6 km) with a turn signal on. A multiple chime sounds when this message is displayed.



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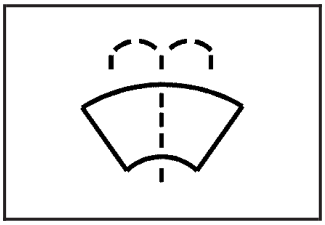
## WASHER FLUID LOW ADD FLUID



This symbol appears with this message.

This message displays when your vehicle is low on windshield washer fluid. Refill the windshield washer fluid reservoir as soon as possible. See *Windshield Washer Fluid on page 380* for more information.

# DIC Vehicle Customization

Your vehicle has customization capabilities that allow you to program certain features to one preferred setting. Customization features can only be programmed to one setting on the vehicle and cannot be programmed to a preferred setting for two different drivers.

All of the customization options may not be available on your vehicle. Only the options available will be displayed on your DIC.

The customization features were set to the default settings when your vehicle left the factory, but they may have been changed from their default state since that time.

The customization preferences are automatically recalled.

To change customization preferences, use the following procedure.

## Entering the Feature Settings Menu

1. Turn the ignition on and place the vehicle in PARK (P).

   To avoid excessive drain on the battery, it is recommended that the headlamps are turned off.

2. Press the customization button to enter the feature settings menu.

   If the menu is not available, FEATURE SETTINGS AVAILABLE IN PARK will display. Before entering the menu, make sure the vehicle is in PARK (P).



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## Feature Settings Menu Items

The following are customization features that allow you to program settings to the vehicle:

### DISPLAY IN ENGLISH

This feature will only display if a language other than English has been set. This feature allows you to change the language in which the DIC messages appear back to English.

Press the customization button until the DISPLAY IN ENGLISH screen appears on the DIC display. Press the set/reset button to select English as the language in which all DIC messages will appear.

### DISPLAY LANGUAGE

This feature allows you to select the language in which the DIC messages will appear.

Press the customization button until the DISPLAY LANGUAGE screen appears on the DIC display. Press the set/reset button to access the settings for this feature. Then press the menu up/down button to scroll through the following settings:

**ENGLISH (default):** All messages will appear in English.

**DEUTSCH (German):** All messages will appear in German.

**FRANCAIS (French):** All messages will appear in French.

**ESPANOL (Spanish):** All messages will appear in Spanish.

**JAPANESE:** All messages will appear in Japanese.

**ARABIC:** All messages will appear in Arabic.

**NO CHANGE:** No change will be made to this feature. The current setting will remain.

Choose one of the available settings and press the set/reset button while it is displayed on the DIC to select it.

### AUTO DOOR LOCK

This feature allows you to select when the vehicle's doors will automatically lock. See *Programmable Automatic Door Locks on page 102* for more information.



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Press the customization button until AUTO DOOR LOCK appears on the DIC display. Press the set/reset button to access the settings for this feature. Then press the menu up/down button to scroll through the following settings:

**SHIFT OUT OF PARK (default):** The vehicle's doors automatically lock when the doors are closed and the vehicle is shifted out of PARK (P).

**AT VEHICLE SPEED:** The vehicle's doors automatically lock when the vehicle speed is above 5 mph (8 km/h) for three seconds.

**NO CHANGE:** No change will be made to this feature. The current setting will remain.

Choose one of the available settings and press the set/reset button while it is displayed on the DIC to select it.

## AUTO DOOR UNLOCK

This feature allows you to select whether or not the door(s) will automatically unlock. It also allows you to select which doors and when they will automatically unlock. See *Programmable Automatic Door Locks on page 102* for more information.

Press the customization button until AUTO DOOR UNLOCK appears on the DIC display. Press the set/reset button to access the settings for this feature. Then press the menu up/down button to scroll through the following settings:

**OFF:** None of the doors will automatically unlock.

**DRIVER AT KEY OUT:** Only the driver's door will unlock when the key is taken out of the ignition.

**DRIVER IN PARK:** Only the driver's door will unlock when the vehicle is shifted into PARK (P).

**ALL AT KEY OUT:** All of the doors will unlock when the key is taken out of the ignition.

**ALL IN PARK (default):** All of the doors will unlock when the vehicle is shifted into PARK (P).

**NO CHANGE:** No change will be made to this feature. The current setting will remain.

Choose one of the available settings and press the set/reset button while it is displayed on the DIC to select it.



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## REMOTE DOOR LOCK

This feature allows you to select the type of feedback you will receive when locking the vehicle with the Remote Keyless Entry (RKE) transmitter. You will not receive feedback when locking the vehicle with the RKE transmitter if the doors are open. See *Remote Keyless Entry (RKE) System Operation on page 96* for more information.

Press the customization button until REMOTE DOOR LOCK appears on the DIC display. Press the set/reset button to access the settings for this feature. Then press the menu up/down button to scroll through the following settings:

**OFF:** There will be no feedback when you press the lock button on the RKE transmitter.

**LIGHTS ONLY:** The exterior lamps will flash when you press the lock button on the RKE transmitter.

**HORN ONLY:** The horn will sound on the second press of the lock button on the RKE transmitter.

**HORN & LIGHTS (default):** The exterior lamps will flash when you press the lock button on the RKE transmitter, and the horn will sound when the lock button is pressed again within five seconds of the previous command.

**NO CHANGE:** No change will be made to this feature. The current setting will remain.

Choose one of the available settings and press the set/reset button while it is displayed on the DIC to select it.

## REMOTE DOOR UNLOCK

This feature allows you to select the type of feedback you will receive when unlocking the vehicle with the Remote Keyless Entry (RKE) transmitter. You will not receive feedback when unlocking the vehicle with the RKE transmitter if the doors are open. See *Remote Keyless Entry (RKE) System Operation on page 96* for more information.



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Press the customization button until REMOTE DOOR UNLOCK appears on the DIC display. Press the set/reset button to access the settings for this feature. Then press the menu up/down button to scroll through the following settings:

**LIGHTS OFF:** The exterior lamps will not flash when you press the unlock button on the RKE transmitter.

**LIGHTS ON (default):** The exterior lamps will flash when you press the unlock button on the RKE transmitter.

**NO CHANGE:** No change will be made to this feature. The current setting will remain.

Choose one of the available settings and press the set/reset button while it is displayed on the DIC to select it.

## DELAY DOOR LOCK

This feature allows you to select whether or not the locking of the vehicle's doors will be delayed. The locking of the vehicle's doors is delayed for up to five seconds after a power door lock switch is pressed when a door is open, or after the lock button on the Remote Keyless Entry (RKE) transmitter is pressed while a door is open. The key must be out of the ignition for this feature to work.

Press the customization button until DELAY DOOR LOCK appears on the DIC display. Press the set/reset button to access the settings for this feature. Then press the menu up/down button to scroll through the following settings:

**OFF:** There will be no delayed locking of the vehicle's doors.

**ON (default):** The locking of the vehicle's doors will be delayed by five seconds after a power door lock switch is pressed when a door is open, or the lock button on the RKE transmitter is pressed while a door is open.



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**NO CHANGE:** No change will be made to this feature. The current setting will remain.

Choose one of the available settings and press the set/reset button while it is displayed on the DIC to select it.

## EXIT LIGHTING

If it is dark enough outside, this feature allows you to select the amount of time you want the exterior lamps to remain on. This happens after the key is turned from ON to OFF.

Press the customization button until EXIT LIGHTING appears on the DIC display. Press the set/reset button to access the settings for this feature. Then press the menu up/down button to scroll through the following settings:

**OFF:** The exterior lamps will not turn on.

**30 SECONDS (default):** The exterior lamps will stay on for 30 seconds.

**1 MINUTE:** The exterior lamps will stay on for one minute.

**2 MINUTES:** The exterior lamps will stay on for two minutes.

**NO CHANGE:** No change will be made to this feature. The current setting will remain.

Choose one of the available settings and press the set/reset button while it is displayed on the DIC to select it.

## APPROACH LIGHTING

This feature allows you to select whether or not to have the exterior lights turn on briefly during low light periods after unlocking the vehicle using the Remote Keyless Entry (RKE) transmitter.

Press the customization button until APPROACH LIGHTING appears on the DIC display. Press the set/reset button to access the settings for this feature. Then press the menu up/down button to scroll through the following settings:

**OFF:** The exterior lights will not turn on when you unlock the vehicle with the RKE transmitter.



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**ON (default):** If it is dark enough outside, the exterior lights will turn on briefly when you unlock the vehicle with the RKE transmitter.

The lights will remain on for 20 seconds or until the lock button on the RKE transmitter is pressed, or the vehicle is no longer off. See *Remote Keyless Entry (RKE) System Operation on page 96* for more information.

**NO CHANGE:** No change will be made to this feature. The current setting will remain.

Choose one of the available settings and press the set/reset button while it is displayed on the DIC to select it.

## CHIME VOLUME

This feature allows you to select the volume level of the chime.

Press the customization button until CHIME VOLUME appears on the DIC display. Press the set/reset button to access the settings for this feature. Then press the menu up/down button to scroll through the following settings:

**NORMAL (default):** The chime volume will be set to a normal level.

**LOUD:** The chime volume will be set to a loud level.

**NO CHANGE:** No change will be made to this feature. The current setting will remain.

Choose one of the available settings and press the set/reset button while it is displayed on the DIC to select it.

## PARK TILT MIRRORS

If your vehicle has this feature, it allows you to select whether or not the outside mirror(s) will automatically tilt down when the vehicle is shifted into REVERSE (R). See *Outside Curb View Assist Mirror on page 138* for more information.

Press the customization button until PARK TILT MIRRORS appears on the DIC display. Press the set/reset button to access the settings for this feature. Then press the menu up/down button to scroll through the following settings:

**OFF (default):** Neither outside mirror will be tilted down when the vehicle is shifted into REVERSE (R).



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**DRIVER MIRROR:** The driver's outside mirror will be tilted down when the vehicle is shifted into REVERSE (R).

**PASSENGER MIRROR:** The passenger's outside mirror will be tilted down when the vehicle is shifted into REVERSE (R).

**BOTH MIRRORS:** The driver's and passenger's outside mirrors will be tilted down when the vehicle is shifted into REVERSE (R).

**NO CHANGE:** No change will be made to this feature. The current setting will remain.

Choose one of the available settings and press the set/reset button while it is displayed on the DIC to select it.

## EASY EXIT SEAT

If the vehicle has this feature, it allows you to select your preference for the automatic easy exit seat feature. See *Memory Seat and Mirrors on page 12* for more information.

Press the customization button until EASY EXIT SEAT appears in the display. Press the set/reset button to access the settings for this feature. Then press the menu up/down button to scroll through the following settings:

**OFF (default):** No automatic seat exit recall will occur.

**ON:** The driver's seat will move back when the key is removed from the ignition.

The automatic easy exit seat movement will only occur one time after the key is removed from the ignition. If the automatic movement has already occurred, and you put the key back in the ignition and remove it again, the seat will stay in the original exit position, unless a memory recall took place prior to removing the key again.

**NO CHANGE:** No change will be made to this feature. The current setting will remain.

Choose one of the available settings and press the set/reset button while it is displayed on the DIC to select it.



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## MEMORY SEAT RECALL

If the vehicle has this feature, it allows you to select your preference for the remote memory seat recall feature. See *Memory Seat and Mirrors on page 12* for more information.

Press the customization button until MEMORY SEAT RECALL appears in the display. Press the set/reset button to access the settings for this feature. Then press the menu up/down button to scroll through the following settings:

**OFF (default):** No remote memory seat recall will occur.

**ON:** The driver's seat and outside mirrors will automatically move to the stored driving position when the unlock button on the Remote Keyless Entry (RKE) transmitter is pressed. If your vehicle has the adjustable throttle and brake pedal feature, the pedals will also automatically move.

**NO CHANGE:** No change will be made to this feature. The current setting will remain.

Choose one of the available settings and press the set/reset button while it is displayed on the DIC to select it.

## FACTORY SETTINGS

This feature allows you to set all of the customization features back to their factory default settings.

Press the customization button until FACTORY SETTINGS appears on the DIC display. Press the set/reset button to access the settings for this feature. Then press the menu up/down button to scroll through the following settings:

**RESTORE ALL (default):** The customization features will be set to their factory default settings.

**DO NOT RESTORE:** The customization features will not be set to their factory default settings.

Choose one of the available settings and press the set/reset button while it is displayed on the DIC to select it.



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### Exiting the Feature Settings Menu

The feature settings menu will be exited when any of the following occurs:

- The vehicle is shifted out of PARK (P).
- The ignition is no longer in ON.
- The trip/fuel or vehicle information DIC buttons are pressed.
- The end of the feature settings menu is reached.
- A 40 second time period has elapsed with no selection made.

## Audio System(s)

Determine which radio your vehicle has and then read the pages following to familiarize yourself with its features.

Driving without distraction is a necessity for a safer driving experience. See *Defensive Driving on page 274*. By taking a few moments to read this manual and get familiar with your vehicle's audio system, you can use it with less effort, as well as take advantage of its features. While your vehicle is parked, set up your audio system by presetting your favorite radio stations, setting the tone and adjusting the speakers. Then, when driving conditions permit, you can tune to your favorite stations using the presets and steering wheel controls if the vehicle has them.



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## ⚠ CAUTION:

**This system provides you with a far greater access to audio stations and song listings. Giving extended attention to entertainment tasks while driving can cause a crash and you or others can be injured or killed. Always keep your eyes on the road and your mind on the drive — avoid engaging in extended searching while driving.**

Keeping your mind on the drive is important for safe driving. Here are some ways in which you can help avoid distraction while driving.

While your vehicle is parked:

- Familiarize yourself with all of its controls.
- Familiarize yourself with its operation.
- Set up your audio system by presetting your favorite radio stations, setting the tone, and adjusting the speakers. Then, when driving conditions permit, you can tune to your favorite radio stations using the presets and steering wheel controls if the vehicle has them.

***Notice:*** **Before adding any sound equipment to your vehicle, such as an audio system, CD player, CB radio, mobile telephone, or two-way radio, make sure that it can be added by checking with your dealer. Also, check federal rules covering mobile radio and telephone units. If sound equipment can be added, it is very important to do it properly. Added sound equipment can interfere with the operation of your vehicle's engine, radio, or other systems, and even damage them. Your vehicle's systems can interfere with the operation of sound equipment that has been added.**

Your vehicle has a feature called Retained Accessory Power (RAP). With RAP, the audio system can be played even after the ignition is turned off. See *Retained Accessory Power (RAP) on page 118* for more information.



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## Setting the Time (Radio with Single CD Player)

### Enabling/Disabling the Digital Radio Clock

Your vehicle has an analog clock as well as the digital radio clock. At the time of new vehicle delivery, the digital radio clock display should be disabled. If you decide to use the digital radio clock as well as the analog clock, you can change the setting to enable the radio clock display.

Turn the radio clock display on or off by following these steps:

1. Turn the radio on.
2. Press the clock button until the clock and date setting menus appear.
3. Press the pushbutton located under the forward arrow label until the menu for default clock and date settings appear.
4. Press the pushbutton located under the currently displayed status of either ON or OFF. The ON display indicates the radio clock display is disabled and the OFF display indicates the radio clock display is enabled. Press this pushbutton to toggle the radio clock display on or off.

   If the radio clock display is turned on, the screen displays Radio Clock ON for 10 seconds, then returns to the original clock display menu.

   If the radio clock display is turned off, the screen displays Radio Clock OFF for 10 seconds. The menus for clock and date settings are removed, and ON displays as a current status indicating that the clock display can be turned on, if desired.

The radio clock and analog clock are not synchronized. Occasionally you might need to set the digital radio clock using the procedure below to synchronize both clocks.



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## Setting the Time and Date on the Digital Radio Clock

If your vehicle has a radio with a single CD player, it has a clock button for setting the time and date. To set the time and date, do the following:

1. Turn the radio on.
2. Press the clock button and HR, MIN, MM, DD, YYYY (hour, minute, month, day, and year) displays.
3. Press the pushbutton located under each one of the labels that you want to change. Every time the pushbutton is pressed again, the time or the date if selected, increases by one.
   - Another way to increase the time or date, is to press the right SEEK arrow or the FWD (forward) button.
4. To decrease the time or date, press the left SEEK arrow or the REV (reverse) button. You can also turn the tune knob, located on the upper right side of the radio faceplate, to adjust the selected setting.

## Changing the Time and Date Default Setting

To change the time and date default setting, do the following:

1. Change the time default setting from 12 hour to 24 hour or the date default setting from month/day/year to day/month/year, by pressing the clock button.
2. Once the clock and date settings display along with the forward arrow, press the pushbutton located under the forward arrow until the time 12H and 24H, and the date MM/DD/YYYY (month, day, and year) and DD/MM/YYYY (day, month, and year) displays.
3. Press the pushbutton located under the desired option, then press the clock button again to apply the selected default, or let the screen time out.



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## Setting the Time (Radio with Six-Disc CD Player)

### Enabling/Disabling the Digital Radio Clock

Your vehicle has an analog clock as well as the digital radio clock. At the time of new vehicle delivery, the digital radio clock display should be disabled. If you decide to use the digital radio clock as well as the analog clock, you can change the setting to enable the radio clock display.

Turn the radio clock display on or off by following these steps:

1. Turn the radio on.
2. Press the MENU button until the clock label display appears.
3. Press the pushbutton located under the clock label until the clock and date settings appear.
4. Press the pushbutton located under the forward arrow label until the menu for default clock and date settings appear.
5. Press the pushbutton located under the currently displayed status of either ON or OFF. The ON display indicates the radio clock display is disabled and the OFF display indicates the radio clock display is enabled. Press this pushbutton to toggle the radio clock display on or off.

   If the radio clock display is turned on, the screen displays Radio Clock ON for 10 seconds, then returns to the original clock display menu.

   If the radio clock display is turned off, the screen displays Radio Clock OFF for 10 seconds. The menus for clock and date settings are removed, and ON displays as a current status indicating that the clock display can be turned on, if desired.

The radio clock and analog clock are not synchronized. Occasionally you might need to set the digital radio clock using the procedure below to synchronize both clocks.



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## Setting the Time and Date on the Digital Radio Clock

If your vehicle has a radio with a six-disc CD player, it has a MENU button for setting the time and date. To set the time and date, do the following:

1. Turn the radio on.
2. Press the MENU button until the clock option is displayed.
3. Press the pushbutton located under the clock label and the HR, MIN, MM, DD, YYYY (hour, minute, month, day, and year) displays.
4. Press the pushbutton located under each one of the labels that you want to change. Every time the pushbutton is pressed again, the time or the date if selected, increases by one.
   - Another way to increase the time or date, is to press the right SEEK arrow or the FWD (forward) button.
5. To decrease the time or date, press the left SEEK arrow or the REV (reverse) button. You can also turn the tune knob, located on the upper right side of the radio faceplate, to adjust the selected setting.

## Changing the Time and Date Default Setting

To change the time and date default setting, do the following:

1. Change the time default setting from 12 hour to 24 hour or the date default setting from month/day/year to day/month/year, by pressing the MENU button.
2. Once the clock symbol displays, press the pushbutton located under that symbol until the time and date settings display along with a forward arrow.
3. Press the pushbutton located under the forward arrow until the time 12H and 24H, and the date MM/DD/YYYY (month, day, and year) and DD/MM/YYYY (day, month, and year) displays.
4. Press the pushbutton located under the desired option, then press the MENU button again to apply the selected default, or let the screen time out.



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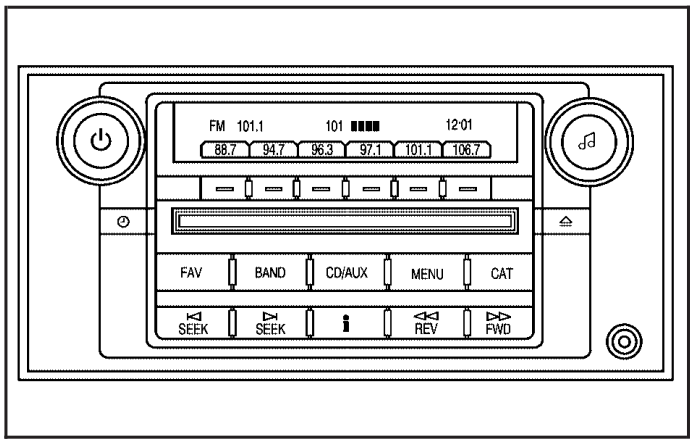
## Radio with CD




**Radio with CD shown, Radio with Six-Disc CD (MP3) similar**

## Radio Data System (RDS)

The audio system has a Radio Data System (RDS). The RDS feature is available for use only on FM stations that broadcast RDS information. This system relies upon receiving specific information from these stations and only works when the information is available.

While the radio is tuned to an FM-RDS station, the station name or call letters display. In rare cases, a radio station could broadcast incorrect information that causes the radio features to work improperly. If this happens, contact the radio station.

## XM™ Satellite Radio Service

XM™ is a satellite radio service that is based in the 48 contiguous United States and Canada. XM™ offers a large variety of coast-to-coast channels including music, news, sports, talk, traffic/weather (U.S. subscribers), and children's programming. XM™ provides digital quality audio and text information that includes song title and artist name. A service fee is required in order to receive the XM™ service. For more information, contact XM™; In the U.S. at www.xmradio.com or call 1-800-852-XMXM (9696) or in Canada at www.xmradio.ca or call 1-877-GET-XMSR (438-9677).



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## Playing the Radio

⏻ **(Power/Volume):** Press this knob to turn the system on and off.

Turn this knob clockwise or counterclockwise to increase or decrease the volume.

**Speed Compensated Volume (SCV):** The radio also has Speed Compensated Volume (SCV). While SCV is on, the radio volume automatically adjusts to compensate for road and wind noise as driving speed changes. That way, the volume level should sound about the same as you drive. To activate SCV:

1. Set the radio volume to the desired level.
2. Press the MENU button to display the radio setup menu.
3. Press the pushbutton under the AUTO VOLUM (volume) label on the radio display.
4. Press the pushbutton under the desired Speed Compensated Volume setting (OFF, Low, Med (medium), or High) to select the level of radio volume compensation. The display times out after approximately 10 seconds. Each higher setting allows for more radio volume compensation at faster vehicle speeds.

## Finding a Station

**BAND:** Press this button to switch between AM, FM, or XM™ (if equipped). The display shows the selection.

**(Tune):** Turn this knob to select radio stations.

⋈ **SEEK** ⋈ **:** Press the right or left SEEK arrow to go to the next or to the previous station and stay there.

To scan stations, press and hold either SEEK arrow for three seconds until a beep sounds. The radio goes to a station, plays for a few seconds, then goes to the next station. Press either SEEK arrow again to stop scanning.

The radio only seeks and scan stations with a strong signal that are in the selected band.



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**i (Information) (XM™ Satellite Radio Service, MP3, and RDS Features):** Press the information button to display additional text information related to the current FM-RDS or XM™ station, or MP3 song. A choice of additional information such as: Channel, Song, Artist, CAT (category) can appear. Continue pressing the information button to highlight the desired label, or press the pushbutton positioned under any one of the labels and the information about that label displays.

When information is not available, No Info displays.

## Storing a Radio Station as a Favorite

Drivers are encouraged to set up their radio station favorites while the vehicle is parked. Tune to your favorite stations using the presets, favorites button, and steering wheel controls, if your vehicle has this feature. See *Defensive Driving on page 274*.

**FAV (Favorites):** A maximum of 36 stations can be programmed as favorites using the six pushbuttons positioned below the radio station frequency labels and by using the radio favorites page button (FAV button). Press the FAV button to go through up to six pages of favorites, each having six favorite stations available per page. Each page of favorites can contain any combination of AM, FM, or XM™ (if equipped) stations. To store a station as a favorite, perform the following steps:

1. Tune to the desired radio station.
2. Press the FAV button to display the page where you want the station stored.
3. Press and hold one of the six pushbuttons until a beep sounds. Whenever that pushbutton is pressed and released, the station that was set, returns.
4. Repeat the steps for each pushbutton radio station you want stored as a favorite.



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The number of favorites pages can be setup using the MENU button. To setup the number of favorites pages, perform the following steps:

1. Press the MENU button to display the radio setup menu.
2. Press the pushbutton located below the FAV 1-6 label.
3. Select the desired number of favorites pages by pressing the pushbutton located below the displayed page numbers.
4. Press the FAV button, or let the menu time out, to return to the original main radio screen showing the radio station frequency labels and to begin the process of programming your favorites for the chosen amount of numbered pages.

## Setting the Tone (Bass/Midrange/Treble)

**BASS/MID/TREB (Bass, Midrange, or Treble):** To adjust bass, midrange, or treble, press the tune knob until the tone control labels display. Continue pressing to highlight the desired label, or press the pushbutton positioned under the desired label. Turn the tune knob clockwise or counterclockwise to adjust the highlighted setting. The highlighted setting can also be adjusted by pressing either the SEEK, FWD (forward), or REV (reverse) button until the desired levels are obtained. If a station's frequency is weak, or if there is static, decrease the treble.

To quickly adjust bass, midrange, or treble to the middle position, press the tune knob for more than two seconds. A beep sounds and the level adjusts to the middle position. Pressing the tune knob for more than two seconds will also center the fade and balance settings to the factory default positions.



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## Finding a Category (CAT) Station

**CAT (Category):** The CAT button is used to find XM™ stations when the radio is in the XM™ mode. To find XM™ channels within a desired category, perform the following:

1. Press the BAND button until the XM™ frequency displays. Press the CAT button to display the category labels on the radio display. Continue pressing the CAT button until the desired category name displays.
2. Press either of the two buttons below the desired category label to immediately tune to the first XM™ station associated with that category.
3. Turn the tune knob, press the buttons below the right or left arrows displayed, or press the right or left SEEK buttons to go to the next or previous XM™ station within the selected category.
4. To exit the category search mode, press the FAV button or BAND button to display your favorites again.

Undesired XM™ categories can be removed through the setup menu. To remove an undesired category, perform the following:

1. Press the MENU button to display the radio setup menu.
2. Press the pushbutton located below the XM CAT label.
3. Turn the tune knob to display the category you want removed.
4. Press the pushbutton located under the Remove label until the category name along with the word Removed displays.
5. Repeat the steps to remove more categories.

Removed categories can be restored by pressing the pushbutton under the Add label when a removed category displays or by pressing the pushbutton under the Restore All label.

The radio does not allow you to remove or add categories while the vehicle is moving faster than 5 mph (8 km/h).

The CAT button also toggles between compressed and uncompressed audio when a mixed disc is present. See “Compressed Audio” later in this section.



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## Radio Message

**Locked:** This message displays when the THEFTLOCK® system has locked up the radio. Take the vehicle to your dealer for service.

If any error occurs repeatedly or if an error cannot be corrected, contact your dealer.

### Radio Messages for XM™ Only

See *XM Radio Messages on page 264* later in this section for further detail.

## Playing a CD (Single CD Player)

Insert a CD partway into the slot, label side up. The player pulls it in and the CD should begin playing.

If the ignition or radio is turned off with a CD in the player, it stays in the player. When the ignition or radio is turned on, the CD starts playing where it stopped, if it was the last selected audio source.

When a CD is inserted, the CD symbol displays on the CD. As each new track starts to play the track number displays.

If playing a CD-R, the sound quality can be reduced due to CD-R quality, the method of recording, the quality of the music that has been recorded, and the way the CD-R has been handled. There can be an increase in skipping, difficulty in finding tracks, and/or difficulty in loading and ejecting. If these problems occur, check the bottom surface of the CD. If the surface of the CD is damaged, such as cracked, broken, or scratched, the CD will not play properly. If the surface of the CD is soiled, see *Care of Your CDs on page 271* for more information.

If there is no apparent damage, try a known good CD.

Do not add any label to a CD, it could get caught in the CD player. If a CD is recorded on a personal computer and a description label is needed, try labeling the top of the recorded CD with a marking pen.

***Notice:*** **If a label is added to a CD, or more than one CD is inserted into the slot at a time, or an attempt is made to play scratched or damaged CDs, the CD player could be damaged. While using the CD player, use only CDs in good condition without any label, load one CD at a time, and keep the CD player and the loading slot free of foreign materials, liquids, and debris.**

If an error displays, see “CD Messages” later in this section.



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⏏ **(Eject):** Press the CD eject button to eject the CD. If the CD is not removed, after several seconds, the CD automatically pulls back into the player.

**(Tune):** Turn this knob to select tracks on the CD currently playing.

⏮ **SEEK** ⏭ **:** Press the left SEEK arrow to go to the start of the current track, if more than ten seconds have played. Press the right SEEK arrow to go to the next track. If either SEEK arrow is held or pressed multiple times, the player continues moving backward or forward through the CD.

⏪ **REV (Reverse):** Press and hold this button to reverse playback quickly within a track. Sound is heard at a reduced volume. Release this button to resume playing the track. The elapsed time of the track displays.

⏩ **FWD (Fast Forward):** Press and hold this button to advance playback quickly within a track. Sound is heard at a reduced volume. Release this button to resume playing the track. The elapsed time of the track displays.

**RDM (Random):** With the random setting, CD tracks can be listened to in random, rather than sequential order. This feature is not available in playlist mode. To use random, do the following:

1. To play tracks from the CD you are listening to in random order, press the pushbutton positioned under the RDM label. The random icon displays.
2. Press the same pushbutton again to turn off random play. The random icon disappears from the display.

**i (Information):** Press this button to switch the display between the track number, elapsed time of the track, and the time. When the ignition is off, press this button to display the time (if the clock display is enabled).

**BAND:** Press this button to listen to the radio when a CD is playing. The CD remains inside the radio for future listening.



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**CD/AUX (CD/Auxiliary):** Press this button to play a CD when listening to the radio. The CD icon and track number displays when a CD is in the player. Press this button again and the system automatically searches for an auxiliary input device, such as a portable audio player. If a portable audio player is not connected, No Aux Input Device displays.

## Playing a CD(s) (Six-Disc CD Player)

**LOAD ⏏:** Press this button to load CDs into the CD player. This CD player holds up to six CDs.

To insert one CD, do the following:

1. Press and release the load button.
2. Wait for the message to insert the disc.
3. Load a CD. Insert the CD partway into the slot, label side up. The player pulls the CD in.

To insert multiple CDs, do the following:

1. Press and hold the load button for five seconds. A beep sounds and Load All Discs displays.
2. Follow the displayed instruction on when to insert the discs. The CD player takes up to six CDs.
3. Press the Load button again to cancel loading more CDs.

If the ignition or radio is turned off, with a CD in the player, it stays in the player. When the ignition or radio is turned on, the CD starts playing where it stopped, if it was the last selected audio source.

When a CD is inserted, the CD symbol appears on the CD. As each new track starts to play, the track number displays.

If playing a CD-R, the sound quality can be reduced due to CD-R quality, the method of recording, the quality of the music that has been recorded, and the way the CD-R has been handled. There can be an increase in skipping, difficulty in finding tracks, and/or difficulty in loading and ejecting. If these problems occur, check the bottom surface of the CD. If the surface of the CD is damaged, such as cracked, broken, or scratched, the CD will not play properly. If the surface of the CD is soiled, see *Care of Your CDs on page 271* for more information.

If there is no apparent damage, try a known good CD.



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Do not add any label to a CD, it could get caught in the CD player. If a CD is recorded on a personal computer and a description label is needed, try labeling the top of the recorded CD with a marking pen.

***Notice:*** **If a label is added to a CD, or more than one CD is inserted into the slot at a time, or an attempt is made to play scratched or damaged CDs, the CD player could be damaged. While using the CD player, use only CDs in good condition without any label, load one CD at a time, and keep the CD player and the loading slot free of foreign materials, liquids, and debris.**

If an error displays, see “CD Messages” later in this section.

⏏ **(Eject):** Press the CD eject button to eject CD(s). To eject the CD that is currently playing, press and release this button. A beep sounds and Ejecting Disc displays. Once the disc is ejected, Remove Disc displays. The CD can be removed. If the CD is not removed, after several seconds, the CD automatically pulls back into the player and begins playing.

For the Six-Disc CD player, press and hold the eject button for two seconds to eject all discs.

**(Tune):** Turn this knob to select tracks on the CD currently playing.

⏮ **SEEK** ⏭ **:** Press the left SEEK arrow to go to the start of the current track, if more than ten seconds have played. Press the right SEEK arrow to go to the next track. If either SEEK arrow is held, or pressed multiple times, the player continues moving backward or forward through the tracks on the CD.

◁◁ **REV (Reverse):** Press and hold this button to reverse playback quickly within a track. You will hear sound at a reduced volume. Release this button to resume playing the track. The elapsed time of the track displays.

▷▷ **FWD (Fast Forward):** Press and hold this button to advance playback quickly within a track. You will hear sound at a reduced volume. Release this button to resume playing the track. The elapsed time of the track displays.



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**RDM (Random):** With the random setting, the tracks can be listened to in random, rather than sequential order, on one CD or all CDs in a six-disc CD player. To use random, do one of the following:

- To play the tracks from the CD you are listening to in random order, press the pushbutton positioned under the RDM label until Randomize Current Disc displays. Press the pushbutton again to turn off random play.
- To play tracks from all CDs loaded in a six-disc CD player in random order, press the pushbutton positioned under the RDM label until Randomize All Discs displays. Press the same pushbutton again to turn off random play.

**BAND:** Press this button to listen to the radio when a CD is playing. The CD remains inside the radio for future listening.

**CD/AUX (CD/Auxiliary):** Press this button to play a CD when listening to the radio. The CD icon and a message showing disc and/or track number displays when a CD is in the player. Press this button again and the system automatically searches for an auxiliary input device, such as a portable audio player. If a portable audio player is not connected, No Aux Input Device displays.

## Playing an MP3/WMA CD-R or CD-RW Disc

Your vehicle's radio system may have the MP3 feature. If it has, it is capable of playing an MP3/WMA CD-R or CD-RW disc. For more information on how to play an MP3/WMA CD-R or CD-RW disc, see *Using an MP3 on page 257* later in this section.

## CD Messages

**DISC ERROR:** If an error message displays and/or the CD comes out, it could be for one of the following reasons:

- The radio system does not support the playlist format, the compressed audio format, or the data file format.
- It is very hot. When the temperature returns to normal, the CD should play.
- You are driving on a very rough road. When the road becomes smoother, the CD should play.
- The CD is dirty, scratched, wet, or upside down.
- The air is very humid. If so, wait about an hour and try again.



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- There could have been a problem while burning the CD.
- The label could be caught in the CD player.

If the CD is not playing correctly, for any other reason, try a known good CD.

If any error occurs repeatedly or if an error cannot be corrected, contact your dealer. If the radio displays an error message, write it down and provide it to your dealer when reporting the problem.

## Using the Auxiliary Input Jack

Your radio system has an auxiliary input jack located on the lower right side of the faceplate. This is not an audio output; do not plug the headphone set into the front auxiliary input jack. You can however, connect an external audio device such as an iPod, laptop computer, MP3 player, CD changer, or cassette tape player, etc. to the auxiliary input jack for use as another source for audio listening.

Drivers are encouraged to set up any auxiliary device while the vehicle is in PARK (P). See *Defensive Driving on page 274* for more information on driver distraction.

To use a portable audio player, connect a 3.5 mm (1/8 inch) cable to the radio's front auxiliary input jack. When a device is connected, press the radio CD/AUX button to begin playing audio from the device over the vehicle speakers.

⏻ **(Power/Volume):** Turn this knob clockwise or counterclockwise to increase or decrease the volume of the portable player. You might need to do additional volume adjustments from the portable device if the volume is not loud or soft enough.

**BAND:** Press this button to listen to the radio when a portable audio device is playing. The portable audio device continues playing, so you might want to stop it or power it off.

**CD/AUX (CD/Auxiliary):** Press this button to play a CD when a portable audio device is playing. Press this button again and the system begins playing audio from the connected portable audio player. If a portable audio player is not connected, No Aux Input Device displays.



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# Using an MP3

## MP3/WMA CD-R or CD-RW Disc

The radio plays MP3 and WMA files that were recorded on a CD-R or CD-RW disc. The files can be recorded with the following fixed bit rates: 32 kbps, 40 kbps, 56 kbps, 64 kbps, 80 kbps, 96 kbps, 112 kbps, 128 kbps, 160 kbps, 192 kbps, 224 kbps, 256 kbps, and 320 kbps or a variable bit rate. Song title, artist name, and album can display when files are recorded using ID3 tags version 1 and 2.

### Compressed Audio

The radio also plays discs that contain both standard uncompressed CD audio and MP3/WMA compressed audio files. By default the radio reads only the uncompressed audio and ignores the MP3/WMA files. Pressing the CAT (category) button toggles between compressed and uncompressed audio format.

### MP3/WMA Format

If you burn your own MP3/WMA disc on a personal computer:

- Make sure the MP3 files are recorded on a CD-R or CD-RW disc.
- Make sure the CD does not have more than a maximum of 50 folders, 50 playlists, and 255 files to read and play.
- Create a folder structure that makes it easy to find songs while driving. Organize songs by albums using one folder for each album. Each folder or album should contain 18 songs or less.
- Avoid subfolders. The system can support up to 8 subfolders deep, however, keep the total number of folders to a minimum in order to reduce the complexity and confusion in trying to locate a particular folder during playback.
- Make sure playlists have a .mp3 or .wpl extension (other file extensions might not work).



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- Minimize the length of the file, folder or playlist names. Long file, folder, or playlist names, or a combination of a large number of files and folders, or playlists can cause the player to be unable to play up to the maximum number of files, folders, playlists, or sessions. If you wish to play a large number of files, folders, playlists, or sessions, minimize the length of the file, folder, or playlist name. Long names also take up more space on the display, potentially getting cut off.
- Finalize the audio disc before you burn it. Trying to add music to an existing disc can cause the disc not to function in the player.

Change playlists by using the previous and next folder buttons, the tuner knob, or the seek buttons. An MP3 CD-R that was recorded using no file folders can also be played. If a CD-R contains more than the maximum of 50 folders, 50 playlists, and 255 files, the player lets you access and navigate up to the maximum, but all items over the maximum cannot be accessed.

### Root Directory

The root directory of the CD-R is treated as a folder. If the root directory has compressed audio files, the directory displays as F1 ROOT. All files contained directly under the root directory are accessed prior to any root directory folders. However, playlists (Px) are always accessed before root folders or files.

### Empty Directory or Folder

If a root directory or a folder exists somewhere in the file structure that contains only folders/subfolders and no compressed files directly beneath them, the player advances to the next folder in the file structure that contains compressed audio files. The empty folder does not display.



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### No Folder

When the CD-R contains only compressed files, the files are located under the root folder. The next and previous folder functions do not display on a CD-R that was recorded without folders or playlists. When displaying the name of the folder the radio displays ROOT.

When the CD-R contains only playlists and compressed audio files, but no folders, all files are located under the root folder. The folder down and the folder up buttons search playlists (Px) first and then goes to the root folder. When the radio displays the name of the folder the radio displays ROOT.

### Order of Play

Tracks recorded to the CD-R play in the following order:

- Play begins from the first track in the first playlist and continues sequentially through all tracks in each playlist. When the last track of the last playlist has played, play continues from the first track of the first playlist.
  - Playlists can be changed by pressing the next and previous folder button, the seek buttons, or turning the tuner knob.
- Play begins from the first track in the first folder and continues sequentially through all tracks in each folder. When the last track of the last folder has played, play continues from the first track of the first folder.

When play enters a new folder, the display does not automatically show the new folder name unless the folder mode has been chosen as the default display. The new track name displays.

### File System and Naming

The song name that displays is the song name that is contained in the ID3 tag. If the song name is not present in the ID3 tag, then the radio displays the file name without the extension (such as .mp3) as the track name.

Track names longer than 22 characters or four pages are shortened. Parts of words on the last page of text and the extension of the filename does not display.



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## Preprogrammed Playlists

Preprogrammed playlists that were created using WinAmp™, MusicMatch™, or Windows Media Player™ software can be accessed, however, they cannot be edited using the radio. These playlists are treated as special folders containing compressed audio song files. Playlists must have a file extension of M3U or WPL.

Playlists can be changed by using the previous and next folder buttons, the seek buttons, or turning the tuner knob. Tracks cannot be changed. Songs are played sequentially; press the REV or FWD to reverse or advance through the currently playing song.

## Playing an MP3

Insert a CD-R partway into the slot (Single CD Player), or press the load button and wait for the message to insert disc (Six-Disc CD Player), label side up. The player pulls it in, and the CD-R should begin playing.

If the ignition or radio is turned off while a CD-R is in the player, it stays in the player. When the ignition or radio is turned on, the CD-R starts to play where it stopped, if it was the last selected audio source.

As each new track starts to play, the track number and song title displays.

If playing a CD-R, the sound quality can be reduced due to CD-R quality, the method of recording, the quality of the music that has been recorded, and the way the CD-R has been handled. There can be an increase in skipping, difficulty in finding tracks, and/or difficulty in loading and ejecting. If these problems occur, check the bottom surface of the CD. If the surface of the CD is damaged, such as cracked, broken, or scratched, the CD will not play properly. If the surface of the CD is soiled, see *Care of Your CDs on page 271* for more information.

If there is no apparent damage, try a known good CD.

Do not add any label to a CD, it could get caught in the CD player. If a CD is recorded on a personal computer and a description label is needed, try labeling the top of the recorded CD with a marking pen.



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***Notice:*** **If a label is added to a CD, or more than one CD is inserted into the slot at a time, or an attempt is made to play scratched or damaged CDs, the CD player could be damaged. While using the CD player, use only CDs in good condition without any label, load one CD at a time, and keep the CD player and the loading slot free of foreign materials, liquids, and debris.**

If an error displays, see “CD Messages” later in this section.

⏏ **(Eject):** Press the CD eject button to eject CD-R(s). To eject the CD-R that is currently playing, press and release this button. A beep sounds and Ejecting Disc displays. Once the disc is ejected, Remove Disc displays. The CD-R can be removed. If the CD-R is not removed, after several seconds, the CD-R automatically pulls back into the player and begins playing.

For the Six-Disc CD player, press and hold the eject button for two seconds to eject all discs.

**(Tune):** Turn this knob to select MP3 files on the CD-R currently playing.

⏮ **SEEK** ⏭ **:** Press the left SEEK arrow to go to the start of the current MP3 file, if more than ten seconds have played. Press the right SEEK arrow to go to the next MP3 file. If either SEEK arrow is held or pressed multiple times, the player continues moving backward or forward through MP3 files on the CD.

< 🗀 **(Previous Folder):** Press the pushbutton positioned under the Folder label to go to the first track in the previous folder.

🗀 > **(Next Folder):** Press the pushbutton positioned under the Folder label to go to the first track in the next folder.

⏪ **REV (Reverse):** Press and hold this button to reverse playback quickly within an MP3 file. Sound is heard at a reduced volume.

Release this button to resume playing the file. The elapsed time of the file displays.



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**FWD (Fast Forward):** Press and hold this button to advance playback quickly within an MP3 file. Sound is heard at a reduced volume.

Release this button to resume playing the file. The elapsed time of the file displays.

**RDM (Random):** With the random setting, MP3 files on the CD-R can be played in random, rather than sequential order, on one CD-R or all discs in a six-disc CD player. To use random, do one of the following:

1. To play MP3 files from the CD-R in random order, press the pushbutton positioned under the RDM label until Random Current Disc displays. Press the same pushbutton again to turn off random play.
2. To play songs from all CDs loaded in a six-disc CD player in random order, press the pushbutton positioned under the RDM label until Randomize All Discs displays. Press the same pushbutton again to turn off random play.

**(Music Navigator):** Use the music navigator feature to play MP3 files on the CD-R in order by artist or album. Press the pushbutton located below the music navigator label. The player scans the disc to sort the files by artist and album ID3 tag information. It could take several minutes to scan the disc depending on the number of MP3 files recorded to the CD-R. The radio might begin playing while it is scanning the disc in the background. When the scan is finished, the CD-R begins playing again.

Once the disc has scanned, the player defaults to playing MP3 files in order by artist. The current artist playing is shown on the second line of the display between the arrows. Once all songs by that artist have played, the player moves to the next artist in alphabetical order on the CD-R and begins playing MP3 files by that artist. To listen to MP3 files by another artist, press the pushbutton located below either arrow button. The CD goes to the next or previous artist in alphabetical order. Continue pressing either button until the desired artist displays.



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To change from playback by artist to playback by album, press the pushbutton located below the Sort By label. From the sort screen, push one of the buttons below the album button. Press the pushbutton below the Back label to return to the main music navigator screen. Now the album name displays on the second line between the arrows and songs from the current album begins to play. Once all songs from that album have played, the player moves to the next album in alphabetical order on the CD-R and begins playing MP3 files from that album.

To exit music navigator mode, press the button below the Back label to return to normal MP3 playback.

**BAND:** Press this button to listen to the radio when a CD is playing. The CD remains inside the radio for future listening.

**CD/AUX (CD/Auxiliary):** Press this button to play a CD when listening to the radio. The CD icon and a message showing disc and/or track number displays when a CD is in the player. Press this button again and the system automatically searches for an auxiliary input device such as a portable audio player. If a portable audio player is not connected, No Aux Input Device displays.



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## XM Radio Messages

| Radio Display Message | Condition | Action Required |
|---|---|---|
| XL (Explicit Language Channels) | XL on the radio display, after the channel name, indicates content with explicit language. | These channels, or any others, can be blocked at a customer's request, by calling 1-800-852-XMXM (9696). |
| XM Updating | Updating encryption code | The encryption code in the receiver is being updated, and no action is required. This process should take no longer than 30 seconds. |
| No XM Signal | Loss of signal | The system is functioning correctly, but the vehicle is in a location that is blocking the XM™ signal. When you move into an open area, the signal should return. |
| Loading XM | Acquiring channel audio (after 4 second delay) | The audio system is acquiring and processing audio and text data. No action is needed. This message should disappear shortly. |
| Channel Off Air | Channel not in service | This channel is not currently in service. Tune to another channel. |
| Channel Unavail | Channel no longer available | This previously assigned channel is no longer assigned. Tune to another station. If this station was one of the presets, choose another station for that preset button. |
| No Artist Info | Artist Name/Feature not available | No artist information is available at this time on this channel. The system is working properly. |
| No Title Info | Song/Program Title not available | No song title information is available at this time on this channel. The system is working properly. |



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| Radio Display Message | Condition | Action Required |
|---|---|---|
| No CAT Info | Category Name not available | No category information is available at this time on this channel. The system is working properly. |
| No Information | No Text/Informational message available | No text or informational messages are available at this time on this channel. The system is working properly. |
| CAT Not Found | No channel available for the chosen category | There are no channels available for the selected category. The system is working properly. |
| XM TheftLocked | Theft lock active | The XM™ receiver in the vehicle could have previously been in another vehicle. For security purposes, XM™ receivers cannot be swapped between vehicles. If this message appears after having your vehicle serviced, check with your dealer. |
| XM Radio ID | Radio ID label (channel 0) | If tuned to channel 0, this message can alternate with the XM™ Radio eight digit radio ID label. This label is needed to activate the service. |
| Unknown | Radio ID not known (should only be if hardware failure) | If this message is received when tuned to channel 0, there could be a receiver fault. Consult with your dealer. |
| Check XM Receivr | Hardware failure | If this message does not clear within a short period of time, the receiver could have a fault. Consult with your dealer. |
| XM Not Available | XM Not Available | If this message does not clear within a short period of time, the receiver could have a fault. Consult with your dealer. |



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## Navigation/Radio System

Your vehicle could have a navigation radio system.

The navigation system has built-in features intended to minimize driver distraction. Technology alone, no matter how advanced, can never replace your own judgment. See the Navigation System manual for some tips to help you reduce distractions while driving.

## Rear Seat Entertainment System

If your vehicle has a navigation radio system, it could have the Rear Seat Entertainment (RSE) system. For more information on how to use the RSE system, see “Rear Seat Entertainment System” in the Navigation System manual.

## Rear Seat Audio (RSA)

This feature lets rear seat passengers listen to and control any of the music sources: radio, CDs, DVDs, or other auxiliary sources. However, the rear seat passengers can only control the music sources the front seat passengers are not listening to (except on some radios where dual control is allowed). For example, rear seat passengers can control a CD and listen to it through the headphones, while the driver listens to the radio through the front speakers. The rear seat passengers have control of the volume for each set of headphones.

You can operate the Rear Seat Audio (RSA) functions even when the main radio is off.

Audio can be heard through wired headphones (not included) plugged into the jacks on the RSA. If your vehicle has this feature, audio can also be heard on Channel 2 of the wireless headphones.

Depending on the audio system, the rear speakers can continue to play even when the RSA audio is active through the headphones.



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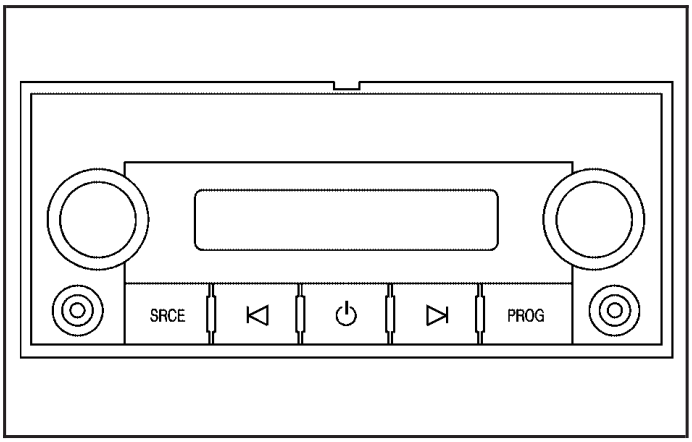


⏻ **(Power):** Press this button to turn the RSA on or off.

**Volume:** Turn this knob to increase or to decrease the volume of the wired headphones. The left knob controls the left headphones and the right knob controls the right headphones.

**SRCE (Source):** Press this button to switch between the radio (AM/FM), XM™ (if equipped), CD, and if your vehicle has these features, DVD, front auxiliary, and rear auxiliary.

⏮ ⏭ **(Seek):** When listening to FM, AM, or XM™ (if equipped), press the seek up or the seek down arrow to go to the next or the previous station or channels and stay there. This function is inactive, with some radios, if the front seat passengers are listening to the radio.

Press and hold the seek up or seek down arrow until the display flashes, to tune to an individual station. The display stops flashing after the buttons have not been pushed for more than two seconds. This function is inactive, with some radios, if the front seat passengers are listening to the radio.

While listening to a CD, press the seek up arrow to hear the next track on the CD. Press the seek down arrow to go back to the start of the current track (if more than ten seconds have played). This function is inactive, with some radios, if the front seat passengers are listening to the radio.



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When a DVD video menu is being displayed, press the seek up arrow or seek down arrow to perform a cursor up or down on the menu. Hold the seek up arrow or seek down arrow to perform a cursor right or left on the menu.

**PROG (Program):** Press this button to go to the next preset radio station or channel set on the main radio. This function is inactive, with some radios, if the front seat passengers are listening to the radio.

When a CD or DVD audio is playing, press this button to go to the beginning of the CD or DVD audio. This function is inactive, with some radios, if the front seat passengers are listening to the CD or DVD audio.

When a disc is playing in the CD or DVD changer, press this button to select the next disc, if multiple discs are loaded. This function is inactive, with some radios, if the front seat passengers are listening to the disc.

When a DVD video menu is being displayed, press the PROG button to perform the menu function, enter.

## Theft-Deterrent Feature

THEFTLOCK® is designed to discourage theft of your vehicle's radio. The feature works automatically by learning a portion of the Vehicle Identification Number (VIN). If the radio is moved to a different vehicle, it does not operate. If the radio is removed from your vehicle, the original VIN in the radio can be used to trace the radio back to your vehicle.

With THEFTLOCK® activated, the radio will not operate if stolen.



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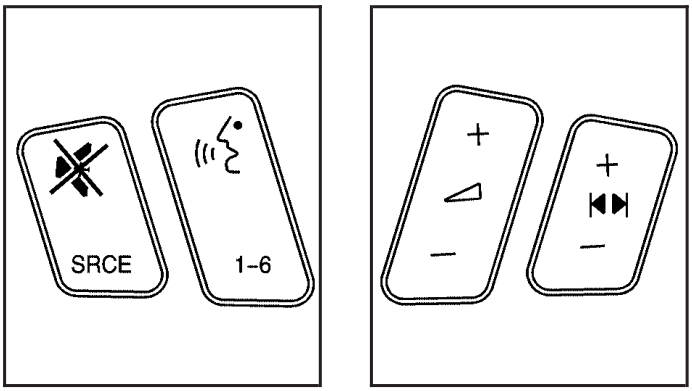
## Audio Steering Wheel Controls




Some audio controls can be adjusted at the steering wheel. They include the following:

**(Mute):** Press this button to mute the system. Press this button again, or any other radio button, to turn the sound on.

**SRCE (Source):** Press this button to switch between AM, FM, XM™ (if equipped), CD, and auxiliary jack.

**(Voice Recognition):** If your vehicle has the navigation system, press and hold this button for longer than one second to initiate voice recognition. See “Voice Recognition” in the Navigation System manual for more information.

If your vehicle has OnStar®, press and hold this button for longer than one second to interact with the OnStar® system. If your vehicle also has the navigation system, press and hold this button for longer than one second to initiate voice recognition and say “OnStar” to enter OnStar® mode. See the *OnStar® System on page 139* in this manual for more information.

**1-6 (Preset Stations):** Press this button to play stations that are programmed on the radio preset pushbuttons. The radio seeks preset stations only with a strong signal that are in the selected band.

While a CD is playing, press this button to go to the next track.



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+ – **(Volume):** Press this button to increase or to decrease the volume.

+ ◀ ▶ – **(Seek):** Press either arrow to go to the next or the previous radio station and stay there. The radio seeks stations only with a strong signal that are in the selected band.

While a CD is playing in a single CD player, press the minus button to go to the previous track or the plus button to go to the next track on the CD.

While a CD is playing in a six-disc CD player, loaded with more than one CD, press the minus button to go to the previous disc or the plus button to go to the next disc.

If the radio has the navigation system, some of the audio steering wheel controls work when a DVD is playing in the navigation radio. See the Navigation System manual for more information.

## Radio Reception

Frequency interference and static can occur during normal radio reception if items such as cellphone chargers, vehicle convenience accessories, and external electronic devices are plugged into the accessory power outlet. If there is interference or static, unplug the item from the accessory power outlet.

### AM

The range for most AM stations is greater than for FM, especially at night. The longer range can cause station frequencies to interfere with each other. For better radio reception, most AM radio stations boost the power levels during the day, and then reduces these levels during the night. Static can also occur when things like storms and power lines interfere with radio reception. When this happens, try reducing the treble on the radio.

### FM Stereo

FM stereo gives the best sound, but FM signals reach only about 10 to 40 miles (16 to 65 km). Tall buildings or hills can interfere with FM signals, causing the sound to fade in and out.



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## XM™ Satellite Radio Service

XM™ Satellite Radio Service gives digital radio reception from coast-to-coast in the 48 contiguous United States, and in Canada. Just as with FM, tall buildings or hills can interfere with satellite radio signals, causing the sound to fade in and out. In addition, traveling or standing under heavy foliage, bridges, garages, or tunnels may cause the loss of XM™ signal for a period of time. The radio might display NO XM SIGNAL to indicate interference.

## Cellular Phone Usage

Cellular phone usage could cause interference with your vehicle's radio. This interference could occur when making or receiving phone calls, charging the phone's battery, or simply having the phone on. This interference is an increased level of static while listening to the radio. If static is received while listening to the radio, unplug the cellular phone and turn it off.

## Care of Your CDs

Handle CDs carefully. Store them in their original cases or other protective cases and away from direct sunlight and dust. The CD player scans the bottom surface of the disc. If the surface of a CD is damaged, such as cracked, broken, or scratched, the CD will not play properly or not at all. If the surface of a CD is soiled, take a soft, lint free cloth or dampen a clean, soft cloth in a mild, neutral detergent solution mixed with water, and clean it. Make sure the wiping process starts from the center to the edge.

Do not touch the bottom side of a CD while handling it; this could damage the surface. Pick up CDs by grasping the outer edges or the edge of the hole and the outer edge.

## Care of the CD Player

Do not use CD lens cleaners for CD players because the lens of the CD optics can become contaminated by lubricants.



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## Diversity Antenna System

The AM-FM antenna is integrated within the rear quarter windows. Make sure the inside surface of the rear quarter windows are not scratched and the grid lines on the glass are not damaged. If the inside surface is damaged, it could interfere with radio reception.

***Notice:*** **Do not apply aftermarket glass tinting with metallic film. The metallic film in some tinting materials will interfere with or distort the incoming radio reception. Any damage caused to your antenna due to metallic tinting materials will not be covered by your warranty.**

***Notice:*** **Do not try to clear frost or other material from the inside of the rear quarter window with a razor blade or anything else that is sharp. This may affect your radio's ability to pick up stations clearly. The repairs wouldn't be covered by your warranty.**

If static is heard on the radio, when the rear window defogger is turned on, it could mean that a defogger grid line has been damaged. If this is true, the grid line must be repaired.

If adding an aftermarket cellular telephone to your vehicle, and the antenna needs to be attached to the glass, make sure that the grid lines for the AM-FM antennas are not damaged. Make sure the cellular telephone antenna does not touch a grid line.

## XM™ Satellite Radio Antenna System

The XM™ Satellite Radio antenna is located on the roof of your vehicle. Keep this antenna clear of snow and ice build up for clear radio reception.

A vehicle with a sunroof might not get the best performance from the XM™ system if the sunroof is open.

Loading items onto the roof of your vehicle can interfere with the performance of the XM™ system. Make sure the XM™ Satellite Radio antenna is not obstructed.



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# Your Driving, the Road, and Your Vehicle

## Defensive Driving

The best advice anyone can give about driving is: Drive defensively.

Please start with a very important safety device in your vehicle: Buckle up. See *Safety Belts: They Are for Everyone on page 22*.

**⚠ CAUTION:**

**Defensive driving really means "Be ready for anything." On city streets, rural roads, or expressways, it means "Always expect the unexpected." Assume that pedestrians or other drivers are going to be careless and make mistakes. Anticipate what they might do and be ready. Rear-end collisions are about the most preventable of accidents. Yet they are common. Allow enough following distance. Defensive driving requires that a driver concentrate on the driving task. Anything that distracts from the driving task makes proper defensive driving more difficult and can even cause a collision, with resulting injury. Ask a passenger to help do these things, or pull off the road in a safe place to do them. These simple defensive driving techniques could save your life.**



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## Drunken Driving

Death and injury associated with drinking and driving is a national tragedy. It is the number one contributor to the highway death toll, claiming thousands of victims every year.

Alcohol affects four things that anyone needs to drive a vehicle:

- Judgment
- Muscular Coordination
- Vision
- Attentiveness

Police records show that almost half of all motor vehicle-related deaths involve alcohol. In most cases, these deaths are the result of someone who was drinking and driving. In recent years, more than 16,000 annual motor vehicle-related deaths have been associated with the use of alcohol, with more than 300,000 people injured.

Many adults — by some estimates, nearly half the adult population — choose never to drink alcohol, so they never drive after drinking. For persons under 21, it is against the law in every U.S. state to drink alcohol. There are good medical, psychological, and developmental reasons for these laws.

The obvious way to eliminate the leading highway safety problem is for people never to drink alcohol and then drive. But what if people do? How much is “too much” if someone plans to drive? It is a lot less than many might think. Although it depends on each person and situation, here is some general information on the problem.

The Blood Alcohol Concentration (BAC) of someone who is drinking depends upon four things:

- The amount of alcohol consumed
- The drinker’s body weight
- The amount of food that is consumed before and during drinking
- The length of time it has taken the drinker to consume the alcohol



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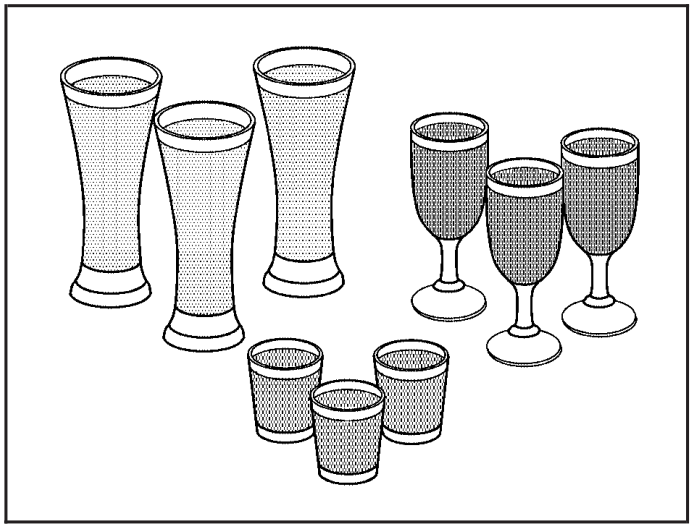
According to the American Medical Association, a 180 lb (82 kg) person who drinks three 12 ounce (355 ml) bottles of beer in an hour will end up with a BAC of about 0.06 percent. The person would reach the same BAC by drinking three 4 ounce (120 ml) glasses of wine or three mixed drinks if each had 1-1/2 ounces (45 ml) of liquors like whiskey, gin, or vodka.



It is the amount of alcohol that counts. For example, if the same person drank three double martinis (3 ounces or 90 ml of liquor each) within an hour, the person's BAC would be close to 0.12 percent. A person who consumes food just before or during drinking will have a somewhat lower BAC level.

There is a gender difference, too. Women generally have a lower relative percentage of body water than men. Since alcohol is carried in body water, this means that a woman generally will reach a higher BAC level than a man of her same body weight will when each has the same number of drinks.

The law in most U.S. states, and throughout Canada, sets the legal limit at 0.08 percent. In some other countries, the limit is even lower. For example, it is 0.05 percent in both France and Germany. The BAC limit for all commercial drivers in the United States is 0.04 percent.

The BAC will be over 0.10 percent after three to six drinks (in one hour). Of course, as we have seen, it depends on how much alcohol is in the drinks, and how quickly the person drinks them.



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But the ability to drive is affected well below a BAC of 0.10 percent. Research shows that the driving skills of many people are impaired at a BAC approaching 0.05 percent, and that the effects are worse at night. All drivers are impaired at BAC levels above 0.05 percent. Statistics show that the chance of being in a collision increases sharply for drivers who have a BAC of 0.05 percent or above. A driver with a BAC level of 0.06 percent has doubled his or her chance of having a collision. At a BAC level of 0.10 percent, the chance of this driver having a collision is 12 times greater; at a level of 0.15 percent, the chance is 25 times greater!

The body takes about an hour to rid itself of the alcohol in one drink. No amount of coffee or number of cold showers will speed that up. “I will be careful” is not the right answer. What if there is an emergency, a need to take sudden action, as when a child darts into the street? A person with even a moderate BAC might not be able to react quickly enough to avoid the collision.

There is something else about drinking and driving that many people do not know. Medical research shows that alcohol in a person’s system can make crash injuries worse, especially injuries to the brain, spinal cord, or heart. This means that when anyone who has been drinking — driver or passenger — is in a crash, that person’s chance of being killed or permanently disabled is higher than if the person had not been drinking.

**⚠ CAUTION:**

**Drinking and then driving is very dangerous. Your reflexes, perceptions, attentiveness, and judgment can be affected by even a small amount of alcohol. You can have a serious — or even fatal — collision if you drive after drinking. Please do not drink and drive or ride with a driver who has been drinking. Ride home in a cab; or if you are with a group, designate a driver who will not drink.**



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## Control of a Vehicle

You have three systems that make your vehicle go where you want it to go. They are the brakes, the steering, and the accelerator. All three systems have to do their work at the places where the tires meet the road.

Sometimes, as when you are driving on snow or ice, it is easy to ask more of those control systems than the tires and road can provide. That means you can lose control of your vehicle. See *StabiliTrak® System on page 283*.

Adding non-GM accessories can affect your vehicle's performance. See *Accessories and Modifications on page 347*.

## Braking

See *Brake System Warning Light on page 204*.

Braking action involves perception time and reaction time.

First, you have to decide to push on the brake pedal. That is perception time. Then you have to bring up your foot and do it. That is reaction time.

Average reaction time is about three-fourths of a second. But that is only an average. It might be less with one driver and as long as two or three seconds or more with another. Age, physical condition, alertness, coordination, and eyesight all play a part. So do alcohol, drugs, and frustration. But even in three-fourths of a second, a vehicle moving at 60 mph (100 km/h) travels 66 feet (20 m). That could be a lot of distance in an emergency, so keeping enough space between your vehicle and others is important.

And, of course, actual stopping distances vary greatly with the surface of the road, whether it is pavement or gravel; the condition of the road, whether it is wet, dry, or icy; tire tread; the condition of the brakes; the weight of the vehicle; and the amount of brake force applied.



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Avoid needless heavy braking. Some people drive in spurts — heavy acceleration followed by heavy braking — rather than keeping pace with traffic. This is a mistake. The brakes may not have time to cool between hard stops. The brakes will wear out much faster if you do a lot of heavy braking. If you keep pace with the traffic and allow realistic following distances, you will eliminate a lot of unnecessary braking. That means better braking and longer brake life.

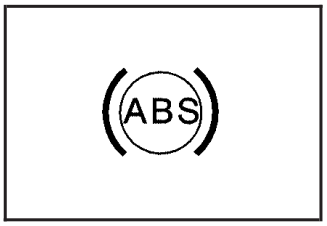
If your vehicle's engine ever stops while you are driving, brake normally but do not pump the brakes. If you do, the pedal may get harder to push down. If the engine stops, you will still have some power brake assist. But you will use it when you brake. Once the power assist is used up, it may take longer to stop and the brake pedal will be harder to push.

Adding non-GM accessories can affect your vehicle's performance. See *Accessories and Modifications on page 347*.

## Anti-Lock Brake System (ABS)

Your vehicle has the Anti-Lock Brake System (ABS), an advanced electronic braking system that will help prevent a braking skid.

When you start your engine and begin to drive away, ABS will check itself. You may hear a momentary motor or clicking noise while this test is going on. This is normal.




If there is a problem with the ABS, this warning light will stay on. See *Anti-Lock Brake System Warning Light on page 205*.



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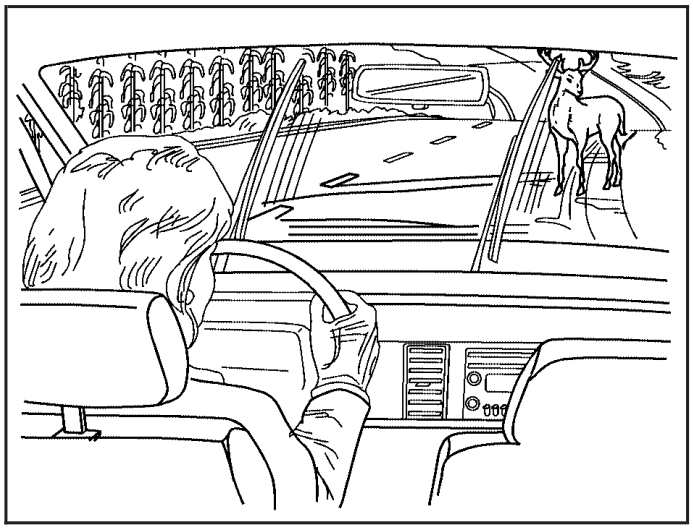
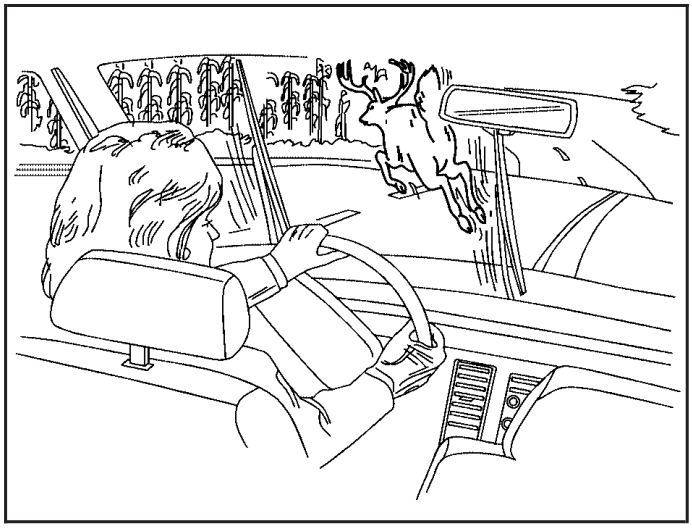


Let us say the road is wet and you are driving safely. Suddenly, an animal jumps out in front of you. You slam on the brakes and continue braking. Here is what happens with ABS:

A computer senses that wheels are slowing down. If one of the wheels is about to stop rolling, the computer will separately work the brakes at each front wheel and at both rear wheels.

ABS can change the brake pressure faster than any driver could. The computer is programmed to make the most of available tire and road conditions. This can help you steer around the obstacle while braking hard.



As you brake, your computer keeps receiving updates on wheel speed and controls braking pressure accordingly.



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Remember: ABS does not change the time you need to get your foot up to the brake pedal or always decrease stopping distance. If you get too close to the vehicle in front of you, you will not have time to apply your brakes if that vehicle suddenly slows or stops. Always leave enough room up ahead to stop, even though you have ABS.

### Using ABS

Do not pump the brakes. Just hold the brake pedal down firmly and let anti-lock work for you. You may feel the brakes vibrate, or you may notice some noise, but this is normal.

## Braking in Emergencies

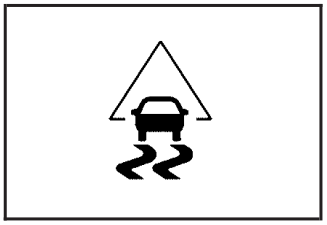
With ABS, you can steer and brake at the same time. In many emergencies, steering can help you more than even the very best braking.

## Traction Control System (TCS)

Your vehicle has a traction control system that limits wheel spin. This is especially useful in slippery road conditions. On a rear-wheel-drive vehicle, the system operates if it senses that one or both of the rear wheels are spinning or beginning to lose traction. On an All-Wheel-Drive (AWD) vehicle, the system will operate if it senses that any of the wheels are spinning or beginning to lose traction. When this happens, the system brakes the spinning wheel(s) and/or reduces engine power to limit wheel spin.

You may feel or hear the system working, but this is normal.

The TCS warning light will also flash to indicate that the traction control system is active.



This warning light will come on to let you know if there is a problem with your traction control system.



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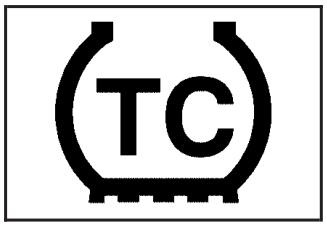
See *Traction Control System (TCS) Warning Light on page 206*. When this warning light is on, the system will not limit wheel spin. Adjust your driving accordingly.

The TCS automatically comes on whenever you start your vehicle. To limit wheel spin, especially in slippery road conditions, you should always leave the system on. But you can turn the traction control system off if you ever need to.

***Notice:*** **Do not repeatedly brake or accelerate heavily when the TCS is off. You could damage your vehicle's driveline.**

When the TCS is switched off on AWD vehicles, you may still feel the system working. This is normal and necessary with the AWD hardware on your vehicle.

You should turn the system off if your vehicle ever gets stuck in sand, mud or snow and rocking the vehicle is required. See *Rocking Your Vehicle to Get It Out on page 322* and *If Your Vehicle is Stuck in Sand, Mud, Ice, or Snow on page 321* for more information. See also *Winter Driving on page 317* for information on using TCS when driving in snowy or icy conditions.




To turn the system off, press the TC (traction control) button located on the console under the climate controls.

If you press the TC (traction control) button once, the traction control system will turn off and the traction control system warning light will come on. Press the TC button again to turn the system back on. If you press and hold the TC button for five seconds, the StabiliTrak® system and the traction control system will turn off. Press the TC (traction control) button again to turn StabiliTrak® back on. For more information, see *StabiliTrak® System on page 283*.

Adding non-GM accessories can affect your vehicle's performance. See *Accessories and Modifications on page 347* for more information.



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## Magnetic Ride Control

Your vehicle may have Magnetic Ride Control that automatically adjusts the ride of your vehicle. Automatic ride control is achieved through a computer used to control and monitor the suspension system. The controller receives input from various sensors to determine the proper system response. If the controller detects a problem within the system, the DIC will display a SERVICE SUSPENSION SYS message. See *DIC Warnings and Messages on page 220* for more information. See your dealer for service.

## Limited-Slip Rear Axle

Your vehicle may have this feature. A limited-slip rear axle can give you additional traction on snow, mud, ice, sand or gravel. It works like a standard axle most of the time, but when one of the rear wheels has no traction and the other does, this feature will allow the wheel with traction to move the vehicle.

## StabiliTrak® System

Your vehicle is equipped with a vehicle stability enhancement system called StabiliTrak®. It is an advanced computer controlled system that assists you with directional control of the vehicle in difficult driving conditions.

StabiliTrak® activates when the computer senses a discrepancy between your intended path and the direction the vehicle is actually traveling. StabiliTrak® selectively applies braking pressure at any one of the vehicle's brakes to help steer the vehicle in the direction which you are steering.

When the stability control system activates, the traction control system and StabiliTrak® light will flash on the instrument panel cluster. This also occurs when traction control is activated. You may also hear a noise or feel vibration in the brake pedal. This is normal. Continue to steer the vehicle in the direction you want it to go.



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If there is a problem detected with StabiliTrak®, a SERVICE STABILITRAK message will be displayed on the Driver Information Center. See *DIC Warnings and Messages on page 220*. When this message is displayed, the system is not operational. Driving should be adjusted accordingly.

StabiliTrak® comes on automatically whenever you start your vehicle. To help assist you with directional control of the vehicle, you should always leave the system on. You can turn StabiliTrak® off if you ever need to through the TC (traction control) on/off button. A STABILITRAK OFF message will appear in the DIC when it has been turned off. See *Traction Control System (TCS) on page 281*.

If your vehicle is in cruise control when the StabiliTrak® activates, the cruise control will automatically disengage. When road conditions allow you to safely use it again, you may reengage the cruise control. See *Cruise Control on page 174* for more information.

## Panic Brake Assist

Your vehicle has a panic brake assist system that monitors the intention of the driver while braking. If the system senses that the driver has applied hard/fast pressure to the brake pedal, the system will generate additional pressure, making it easier for the driver to maintain brake application. When this happens the brake pedal will feel easier to push. Just hold the brake pedal down firmly and let the system work for you. You may feel the brakes vibrate, or you may notice some noise but this is normal. The brakes will return to normal operation after the brake pedal has been released.

## All-Wheel Drive (AWD) System

If your vehicle is equipped with this feature, engine power is sent to all four wheels all the time. This is like four-wheel drive, but it is fully automatic.



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# Steering

## Power Steering

If you lose power steering assist because the engine stops or the system is not functioning, you can steer but it will take much more effort.

## Steering Tips

It is important to take curves at a reasonable speed.

A lot of the “driver lost control” accidents mentioned on the news happen on curves. Here is why:

Experienced driver or beginner, each of us is subject to the same laws of physics when driving on curves. The traction of the tires against the road surface makes it possible for the vehicle to change its path when you turn the front wheels. If there is no traction, inertia will keep the vehicle going in the same direction. If you have ever tried to steer a vehicle on wet ice, you will understand this.

The traction you can get in a curve depends on the condition of the tires and the road surface, the angle at which the curve is banked, and your speed. While you are in a curve, speed is the one factor you can control.

Suppose you are steering through a sharp curve. Then you suddenly accelerate. Both control systems — steering and acceleration — have to do their work where the tires meet the road. Adding the sudden acceleration can demand too much of those places. You can lose control. See *StabiliTrak® System on page 283*.

What should you do if this ever happens? Ease up on the accelerator pedal, steer the vehicle the way you want it to go, and slow down.

Speed limit signs near curves warn that you should adjust your speed. Of course, the posted speeds are based on good weather and road conditions. Under less favorable conditions you will want to go slower.

If you need to reduce your speed as you approach a curve, do it before you enter the curve, while the front wheels are straight ahead.



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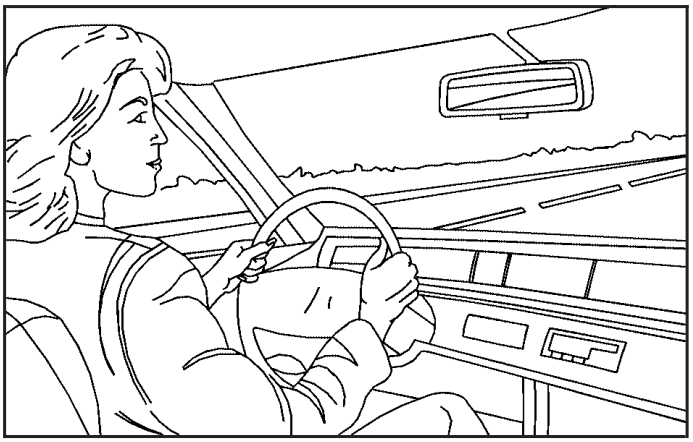
Try to adjust your speed so you can “drive” through the curve. Maintain a reasonable, steady speed. Wait to accelerate until you are out of the curve, and then accelerate gently into the straightaway.

Adding non-GM accessories can affect your vehicle’s performance. See *Accessories and Modifications on page 347*.

## Steering in Emergencies

There are times when steering can be more effective than braking. For example, you come over a hill and find a truck stopped in your lane, or a car suddenly pulls out from nowhere, or a child darts out from between parked cars and stops right in front of you. You can avoid these problems by braking — if you can stop in time. But sometimes you cannot; there is not room. That is the time for evasive action — steering around the problem.

Your vehicle can perform very well in emergencies like these. First, apply the brakes. See *Braking on page 278*. It is better to remove as much speed as you can from a possible collision. Then steer around the problem, to the left or right depending on the space available.



An emergency like this requires close attention and a quick decision. If you are holding the steering wheel at the recommended 9 and 3 o’clock positions, you can turn it a full 180 degrees very quickly without removing either hand. But you have to act fast, steer quickly, and just as quickly straighten the wheel once you have avoided the object.

The fact that such emergency situations are always possible is a good reason to practice defensive driving at all times and wear safety belts properly.



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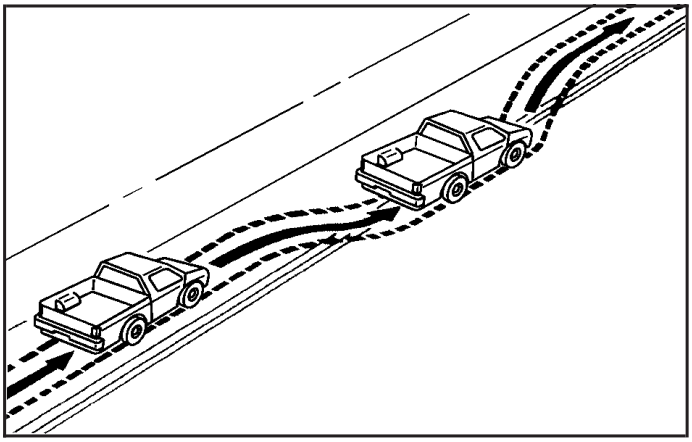
## Off-Road Recovery

You may find that your right wheels have dropped off the edge of a road onto the shoulder while you are driving.



If the level of the shoulder is only slightly below the pavement, recovery should be fairly easy. Ease off the accelerator and then, if there is nothing in the way, steer so that your vehicle straddles the edge of the pavement.

You can turn the steering wheel up to one-quarter turn until the right front tire contacts the pavement edge. Then turn your steering wheel to go straight down the roadway.

## Passing

The driver of a vehicle about to pass another on a two-lane highway waits for just the right moment, accelerates, moves around the vehicle ahead, then goes back into the right lane again. A simple maneuver?

Not necessarily! Passing another vehicle on a two-lane highway is a potentially dangerous move, since the passing vehicle occupies the same lane as oncoming traffic for several seconds. A miscalculation, an error in judgment, or a brief surrender to frustration or anger can suddenly put the passing driver face to face with the worst of all traffic accidents — the head-on collision.



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So here are some tips for passing:

- Drive ahead. Look down the road, to the sides, and to crossroads for situations that might affect your passing patterns. If you have any doubt whatsoever about making a successful pass, wait for a better time.
- Watch for traffic signs, pavement markings, and lines. If you can see a sign up ahead that might indicate a turn or an intersection, delay your pass. A broken center line usually indicates it is all right to pass, providing the road ahead is clear. Never cross a solid line on your side of the lane or a double solid line, even if the road seems empty of approaching traffic.
- Do not get too close to the vehicle you want to pass while you are awaiting an opportunity. For one thing, following too closely reduces your area of vision, especially if you are following a larger vehicle. Also, you will not have adequate space if the vehicle ahead suddenly slows or stops. Keep back a reasonable distance.
- When it looks like a chance to pass is coming up, start to accelerate but stay in the right lane and do not get too close. Time your move so you will be increasing speed as the time comes to move into the other lane. If the way is clear to pass, you will have a running start that more than makes up for the distance you would lose by dropping back. And if something happens to cause you to cancel your pass, you need only slow down and drop back again and wait for another opportunity.
- If other vehicles are lined up to pass a slow vehicle, wait your turn. But take care that someone is not trying to pass you as you pull out to pass the slow vehicle. Remember to glance over your shoulder and check the blind spot.



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- Check your vehicle's mirrors, glance over your shoulder, and start your left lane change signal before moving out of the right lane to pass. When you are far enough ahead of the passed vehicle to see its front in your vehicle's inside mirror, activate the right lane change signal and move back into the right lane. Remember that, if your vehicle's passenger side outside mirror is convex, the vehicle you just passed may seem to be farther away from you than it really is.
- Try not to pass more than one vehicle at a time on two-lane roads. Reconsider before passing the next vehicle.
- Do not overtake a slowly moving vehicle too rapidly. Even though the brake lamps are not flashing, it may be slowing down or starting to turn.
- If you are being passed, make it easy for the following driver to get ahead of you. Perhaps you can ease a little to the right.

## Loss of Control

Let us review what driving experts say about what happens when the three control systems — brakes, steering, and acceleration — do not have enough friction where the tires meet the road to do what the driver has asked.

In any emergency, do not give up. Keep trying to steer and constantly seek an escape route or area of less danger.

### Skidding

In a skid, a driver can lose control of the vehicle. Defensive drivers avoid most skids by taking reasonable care suited to existing conditions, and by not overdriving those conditions. But skids are always possible.

The three types of skids correspond to your vehicle's three control systems. In the braking skid, your wheels are not rolling. In the steering or cornering skid, too much speed or steering in a curve causes tires to slip and lose cornering force. And in the acceleration skid, too much throttle causes the driving wheels to spin.

A cornering skid is best handled by easing your foot off the accelerator pedal.



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Remember: Any traction control system helps avoid only the acceleration skid. If your traction control system is off, then an acceleration skid is also best handled by easing your foot off the accelerator pedal.

If your vehicle starts to slide, ease your foot off the accelerator pedal and quickly steer the way you want the vehicle to go. If you start steering quickly enough, your vehicle may straighten out. Always be ready for a second skid if it occurs.

Of course, traction is reduced when water, snow, ice, gravel, or other material is on the road. For safety, you will want to slow down and adjust your driving to these conditions. It is important to slow down on slippery surfaces because stopping distance will be longer and vehicle control more limited.

While driving on a surface with reduced traction, try your best to avoid sudden steering, acceleration, or braking, including reducing vehicle speed by shifting to a lower gear. Any sudden changes could cause the tires to slide. You may not realize the surface is slippery until your vehicle is skidding. Learn to recognize warning clues — such as enough water, ice, or packed snow on the road to make a mirrored surface — and slow down when you have any doubt.

Remember: Any Anti-Lock Brake System (ABS) helps avoid only the braking skid.



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## Off-Road Driving

This off-road guide is for vehicles that have all-wheel drive. If your vehicle does not have all-wheel drive, you should not drive off-road unless you are on a level, solid surface.

Many of the same design features that help make your vehicle responsive on paved roads during poor weather conditions — features like all-wheel drive — help make it much better suited for off-road use. Its higher ground clearance also helps your vehicle step over some off-road obstacles. But your vehicle does not have features like special underbody shielding and a transfer case low gear range, things that are usually thought necessary for extended or severe off-road service.

Also, see *Braking on page 278*.

The airbag system is designed to work properly under a wide range of conditions, including off-road usage. Observe safe driving speeds, especially on rough terrain. As always, wear your safety belt.

Off-road driving can be great fun. But it does have some definite hazards. The greatest of these is the terrain itself.

"Off-roading" means you have left the North American road system behind. Traffic lanes are not marked. Curves are not banked. There are no road signs. Surfaces can be slippery, rough, uphill, or downhill. In short, you have gone right back to nature.

Off-road driving involves some new skills. And that is why it is very important that you read this guide. You will find many driving tips and suggestions. These will help make your off-road driving safer and more enjoyable.

## Before You Go Off-Roading

There are some things to do before you go out. For example, be sure to have all necessary maintenance and service work done. Check to make sure all underbody shields, if the vehicle has them, are properly attached. Is there enough fuel? Is the spare tire fully inflated? Are the fluid levels up where they should be? What are the local laws that apply to off-roading where you will be driving? If you do not know, you should check with law enforcement people in the area. Will you be on someone's private land? If so, be sure to get the necessary permission.



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## Loading Your Vehicle for Off-Road Driving

**⚠ CAUTION:**

- **Cargo on the load floor piled higher than the seatbacks can be thrown forward during a sudden stop. You or your passengers could be injured. Keep cargo below the top of the seatbacks.**
- **Unsecured cargo on the load floor can be tossed about when driving over rough terrain. You or your passengers can be struck by flying objects. Secure the cargo properly.**
- **Heavy loads on the roof raise the vehicle's center of gravity, making it more likely to roll over. You can be seriously or fatally injured if the vehicle rolls over. Put heavy loads inside the cargo area, not on the roof. Keep cargo in the cargo area as far forward and low as possible.**

There are some important things to remember about how to load your vehicle.

- The heaviest things should be on the load floor and forward of your rear axle. Put heavier items as far forward as you can.
- Be sure the load is secured properly, so driving on the off-road terrain does not toss things around.

You will find other important information in this manual. See *Loading Your Vehicle on page 322*, *Luggage Carrier on page 154* and *Tires on page 398*.



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## Environmental Concerns

Off-road driving can provide wholesome and satisfying recreation. However, it also raises environmental concerns. We recognize these concerns and urge every off-roader to follow these basic rules for protecting the environment:

- Always use established trails, roads, and areas that have been specially set aside for public off-road recreational driving; obey all posted regulations.
- Avoid any driving practice that could damage the environment — shrubs, flowers, trees, grasses — or disturb wildlife. This includes wheel-spinning, breaking down trees, or unnecessary driving through streams or over soft ground.
- Always carry a litter bag — make sure all refuse is removed from any campsite before leaving.
- Take extreme care with open fires where permitted, camp stoves, and lanterns.
- Never park your vehicle over dry grass or other combustible materials that could catch fire from the heat of the vehicle's exhaust system.

## Traveling to Remote Areas

It makes sense to plan your trip, especially when going to a remote area. Know the terrain and plan your route. You are much less likely to get bad surprises. Get accurate maps of trails and terrain. Try to learn of any blocked or closed roads.

It is also a good idea to travel with at least one other vehicle. If something happens to one of them, the other can help quickly.

## Getting Familiar with Off-Road Driving

It is a good idea to practice in an area that is safe and close to home before you go into the wilderness. Off-road driving does require some new and different driving skills. Here is what we mean.

Tune your senses to different kinds of signals. Your eyes, for example, need to constantly sweep the terrain for unexpected obstacles. Your ears need to listen for unusual tire or engine sounds. With your arms, hands, feet, and body, you will need to respond to vibrations and vehicle bounce.



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Controlling your vehicle is the key to successful off-road driving. One of the best ways to control your vehicle is to control your speed. Here are some things to keep in mind. At higher speeds:

- You approach things faster and you have less time to scan the terrain for obstacles.
- You have less time to react.
- You have more vehicle bounce when you drive over obstacles.
- You will need more distance for braking, especially since you are on an unpaved surface.

**⚠ CAUTION:**

**When you are driving off-road, bouncing and quick changes in direction can easily throw you out of position. This could cause you to lose control and crash. So, whether you are driving on or off the road, you and your passengers should wear safety belts.**

## Scanning the Terrain

Off-road driving can take you over many different kinds of terrain. You need to be familiar with the terrain and its many different features. Here are some things to consider.

**Surface Conditions:** Off-roading can take you over hard-packed dirt, gravel, rocks, grass, sand, mud, snow, or ice. Each of these surfaces affects the steering, acceleration, and braking of your vehicle in different ways. Depending upon the kind of surface you are on, you may experience slipping, sliding, wheel spinning, delayed acceleration, poor traction, and longer braking distances.



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**Surface Obstacles:** Unseen or hidden obstacles can be hazardous. A rock, log, hole, rut, or bump can startle you if you are not prepared for them. Often these obstacles are hidden by grass, bushes, snow, or even the rise and fall of the terrain itself. Here are some things to consider:

- Is the path ahead clear?
- Will the surface texture change abruptly up ahead?
- Does the travel take you uphill or downhill? There is more discussion of these subjects later.
- Will you have to stop suddenly or change direction quickly?

When you drive over obstacles or rough terrain, keep a firm grip on the steering wheel. Ruts, troughs, or other surface features can jerk the wheel out of your hands if you are not prepared.

When you drive over bumps, rocks, or other obstacles, your wheels can leave the ground. If this happens, even with one or two wheels, you cannot control the vehicle as well or at all.

Because you will be on an unpaved surface, it is especially important to avoid sudden acceleration, sudden turns, or sudden braking.

In a way, off-road driving requires a different kind of alertness from driving on paved roads and highways. There are no road signs, posted speed limits, or signal lights. You have to use your own good judgment about what is safe and what is not.

Drinking and driving can be very dangerous on any road. And this is certainly true for off-road driving. At the very time you need special alertness and driving skills, your reflexes, perceptions, and judgment can be affected by even a small amount of alcohol. You could have a serious — or even fatal — accident if you drink and drive or ride with a driver who has been drinking.
See *Drunken Driving on page 275*.



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## Driving on Off-Road Hills

Off-road driving often takes you up, down, or across a hill. Driving safely on hills requires good judgment and understanding of what your vehicle can and cannot do. There are some hills that simply cannot be driven, no matter how well built the vehicle.

### ⚠ CAUTION:

**Many hills are simply too steep for any vehicle. If you drive up them, you will stall. If you drive down them, you cannot control your speed. If you drive across them, you will roll over. You could be seriously injured or killed. If you have any doubt about the steepness, do not drive the hill.**

## Approaching a Hill

When you approach a hill, you need to decide if it is one of those hills that is just too steep to climb, descend, or cross. Steepness can be hard to judge. On a very small hill, for example, there may be a smooth, constant incline with only a small change in elevation where you can easily see all the way to the top. On a large hill, the incline may get steeper as you near the top, but you may not see this because the crest of the hill is hidden by bushes, grass, or shrubs.

Here are some other things to consider as you approach a hill.

- Is there a constant incline, or does the hill get sharply steeper in places?
- Is there good traction on the hillside, or will the surface cause tire slipping?
- Is there a straight path up or down the hill so you will not have to make turning maneuvers?
- Are there obstructions on the hill that can block your path, such as boulders, trees, logs, or ruts?



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- What is beyond the hill? Is there a cliff, an embankment, a drop-off, a fence? Get out and walk the hill if you do not know. It is the smart way to find out.
- Is the hill simply too rough? Steep hills often have ruts, gullies, troughs, and exposed rocks because they are more susceptible to the effects of erosion.

## Driving Uphill

Once you decide you can safely drive up the hill, you need to take some special steps.

- Use a low gear and get a firm grip on the steering wheel.
- Get a smooth start up the hill and try to maintain your speed. Do not use more power than you need, because you do not want your wheels to start spinning or sliding.
- Try to drive straight up the hill if at all possible. If the path twists and turns, you might want to find another route.

**⚠ CAUTION:**

**Turning or driving across steep hills can be dangerous. You could lose traction, slide sideways, and possibly roll over. You could be seriously injured or killed. When driving up hills, always try to go straight up.**

- Ease up on your speed as you approach the top of the hill.
- Attach a flag to the vehicle to make you more visible to approaching traffic on trails or hills.



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- Sound the horn as you approach the top of the hill to let opposing traffic know you are there.
- Use your headlamps, even during the day. They make you more visible to oncoming traffic.

**⚠ CAUTION:**

**Driving to the top (crest) of a hill at full speed can cause an accident. There could be a drop-off, embankment, cliff, or even another vehicle. You could be seriously injured or killed. As you near the top of a hill, slow down and stay alert.**

**Q: What should I do if my vehicle stalls, or is about to stall, and I cannot make it up the hill?**

**A:** If this happens, there are some things you should do, and there are some things you must not do. First, here is what you *should* do:

- Push the brake pedal to stop the vehicle and keep it from rolling backwards. Also, apply the parking brake.
- If your engine is still running, shift the transmission to REVERSE (R), release the parking brake, and slowly back down the hill in REVERSE (R).
- If your engine has stopped running, you will need to restart it. With the brake pedal pressed and the parking brake still applied, shift the transmission to PARK (P) and restart the engine. Then shift to REVERSE (R), release the parking brake, and slowly back down the hill as straight as possible in REVERSE (R).



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- As you are backing down the hill, put your left hand on the steering wheel at the 12 o'clock position. This way you will be able to tell if your wheels are straight and maneuver as you back down. It is best that you back down the hill with your wheels straight rather than in the left or right direction. Turning the wheel too far to the left or right will increase the possibility of a rollover.

Here are some things you *must not* do if you stall, or are about to stall, when going up a hill.

- Never attempt to prevent a stall by shifting into NEUTRAL (N) to rev-up the engine and regain forward momentum. This will not work. Your vehicle will roll backwards very quickly and you could go out of control.

  Instead, apply the regular brake to stop the vehicle. Then apply the parking brake. Shift to REVERSE (R), release the parking brake, and slowly back straight down.

- Never attempt to turn around if you are about to stall when going up a hill. If the hill is steep enough to stall your vehicle, it is steep enough to cause you to roll over if you turn around. If you cannot make it up the hill, you must back straight down the hill.

**Q: Suppose, after stalling, I try to back down the hill and decide I just cannot do it. What should I do?**

**A:** Set the parking brake, put the transmission in PARK (P), and turn off the engine. Leave the vehicle and go get some help. Exit on the uphill side and stay clear of the path the vehicle would take if it rolled downhill.



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## Driving Downhill

When off-roading takes you downhill, you will want to consider a number of things:

- How steep is the downhill? Will I be able to maintain vehicle control?
- What is the surface like? Smooth? Rough? Slippery? Hard-packed dirt? Gravel?
- Are there hidden surface obstacles? Ruts? Logs? Boulders?
- What is at the bottom of the hill? Is there a hidden creek bank or even a river bottom with large rocks?

If you decide you can go down a hill safely, then try to keep your vehicle headed straight down, and use a low gear. This way, engine drag can help the brakes and they will not have to do all the work. Descend slowly, keeping your vehicle under control at all times.

**⚠ CAUTION:**

**Heavy braking when going down a hill can cause your brakes to overheat and fade. This could cause loss of control and a serious accident. Apply the brakes lightly when descending a hill and use a low gear to keep vehicle speed under control.**

**Q: Are there some things I should not do when driving down a hill?**

**A:** Yes! These are important because, if you ignore them, you could lose control and have a serious accident.

- When driving downhill, avoid turns that take you across the incline of the hill. A hill that is not too steep to drive down may be too steep to drive across. You could roll over if you do not drive straight down.
- Never go downhill with the transmission in NEUTRAL (N). This is called “free wheeling.” The brakes will have to do all the work and could overheat and fade.



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**Q: Am I likely to stall when going downhill?**

**A:** It is much more likely to happen going uphill. But if it happens going downhill, here is what to do.

1. Stop your vehicle by applying the regular brakes. Apply the parking brake.
2. Shift to PARK (P) and, while still braking, restart the engine.
3. Shift back to a low gear, release the parking brake, and drive straight down.
4. If the engine will not start, get out and get help.

## Driving Across an Incline

Sooner or later, an off-road trail will probably go across the incline of a hill. If this happens, you have to decide whether to try to drive across the incline. Here are some things to consider:

- A hill that can be driven straight up or down may be too steep to drive across. When you go straight up or down a hill, the length of the wheel base — the distance from the front wheels to the rear wheels — reduces the likelihood the vehicle will tumble end over end. But when you drive across an incline, the much more narrow track width — the distance between the left and right wheels — may not prevent the vehicle from tilting and rolling over. Also, driving across an incline puts more weight on the downhill wheels. This could cause a downhill slide or a rollover.
- Surface conditions can be a problem when you drive across a hill. Loose gravel, muddy spots, or even wet grass can cause your tires to slip sideways, downhill. If the vehicle slips sideways, it can hit something that will trip it — a rock, a rut, etc. — and roll over.



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- Hidden obstacles can make the steepness of the incline even worse. If you drive across a rock with the uphill wheels, or if the downhill wheels drop into a rut or depression, your vehicle can tilt even more.

For reasons like these, you need to decide carefully whether to try to drive across an incline. Just because the trail goes across the incline does not mean you have to drive it. The last vehicle to try it might have rolled over.

**⚠ CAUTION:**

**Driving across an incline that is too steep will make your vehicle roll over. You could be seriously injured or killed. If you have any doubt about the steepness of the incline, do not drive across it. Find another route instead.**

**Q: What if I am driving across an incline that is not too steep, but I hit some loose gravel and start to slide downhill. What should I do?**

**A:** If you feel your vehicle starting to slide sideways, turn downhill. This should help straighten out the vehicle and prevent the side slipping. However, a much better way to prevent this is to get out and “walk the course” so you know what the surface is like before you drive it.



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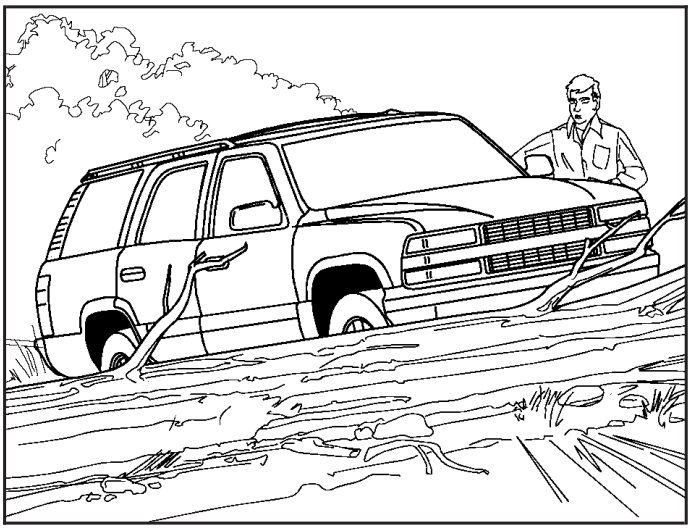
## Stalling on an Incline

If your vehicle stalls when you are crossing an incline, be sure you, and any passengers, get out on the uphill side, even if the door there is harder to open. If you get out on the downhill side and the vehicle starts to roll over, you will be right in its path.

If you have to walk down the slope, stay out of the path the vehicle will take if it does roll over.



**⚠ CAUTION:**

**Getting out on the downhill (low) side of a vehicle stopped across an incline is dangerous. If the vehicle rolls over, you could be crushed or killed. Always get out on the uphill (high) side of the vehicle and stay well clear of the rollover path.**



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## Driving in Mud, Sand, Snow, or Ice

When you drive in mud, snow, or sand, the wheels will not get good traction. You cannot accelerate as quickly, turning is more difficult, and you will need longer braking distances.

It is best to use a low gear when you are in mud —the deeper the mud, the lower the gear. In really deep mud, the idea is to keep your vehicle moving so you do not get stuck.

When you drive on sand, you will sense a change in wheel traction. But it will depend upon how loosely packed the sand is. On loosely packed sand, such as on beaches or sand dunes, the tires will tend to sink into the sand. This has an effect on steering, accelerating, and braking. Drive at a reduced speed and avoid sharp turns or abrupt maneuvers.

Hard packed snow and ice offer the worst tire traction. On these surfaces, it is very easy to lose control. On wet ice, for example, the traction is so poor that you will have difficulty accelerating. And, if you do get moving, poor steering and difficult braking can cause you to slide out of control.

**⚠ CAUTION:**

**Driving on frozen lakes, ponds, or rivers can be dangerous. Underwater springs, currents under the ice, or sudden thaws can weaken the ice. Your vehicle could fall through the ice and you and your passengers could drown. Drive your vehicle on safe surfaces only.**



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## Driving in Water

Heavy rain can mean flash flooding, and flood waters demand extreme caution.

Find out how deep the water is before you drive through it. If it is deep enough to cover your wheel hubs, axles, or exhaust pipe, do not try it — you probably will not get through. Also, water that deep can damage the axle and other vehicle parts.

If the water is not too deep, drive slowly through it. At faster speeds, water splashes on your vehicle's ignition system and your vehicle can stall. Stalling can also occur if you get the tailpipe under water. And, as long as the tailpipe is under water, you will never be able to start the engine. When you go through water, remember that when the brakes get wet, it may take you longer to stop.

**⚠ CAUTION:**

**Driving through rushing water can be dangerous. Deep water can sweep your vehicle downstream and you and your passengers could drown. If it is only shallow water, it can still wash away the ground from under your tires, and you could lose traction and roll the vehicle over. Do not drive through rushing water.**

See *Driving in Rain and on Wet Roads on page 308* for more information on driving through water.



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## After Off-Road Driving

Remove any brush or debris that has collected on the underbody, chassis, or under the hood. These accumulations can be a fire hazard.

After operation in mud or sand, have the brake linings cleaned and checked. These substances can cause glazing and uneven braking. Check the body structure, steering, suspension, wheels, tires, and exhaust system for damage. Also, check the fuel lines and cooling system for any leakage.

Your vehicle will require more frequent service due to off-road use. Refer to the Maintenance Schedule for additional information.

## Driving at Night

Night driving is more dangerous than day driving. One reason is that some drivers are likely to be impaired — by alcohol or drugs, with night vision problems, or by fatigue.

Here are some tips on night driving.

- Drive defensively.
- Do not drink and drive.
- Adjust the inside rearview mirror to reduce the glare from headlamps behind you.
- Since you cannot see as well, you may need to slow down and keep more space between you and other vehicles.
- Slow down, especially on higher speed roads. Your vehicle's headlamps can light up only so much road ahead.
- In remote areas, watch for animals.
- If you are tired, pull off the road in a safe place and rest.



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No one can see as well at night as in the daytime. But as we get older these differences increase. A 50-year-old driver may require at least twice as much light to see the same thing at night as a 20-year-old.

What you do in the daytime can also affect your night vision. For example, if you spend the day in bright sunshine you are wise to wear sunglasses. Your eyes will have less trouble adjusting to night. But if you are driving, do not wear sunglasses at night. They may cut down on glare from headlamps, but they also make a lot of things invisible.

You can be temporarily blinded by approaching headlamps. It can take a second or two, or even several seconds, for your eyes to re-adjust to the dark. When you are faced with severe glare, as from a driver who does not lower the high beams, or a vehicle with misaimed headlamps, slow down a little. Avoid staring directly into the approaching headlamps.

Keep the windshield and all the glass on your vehicle clean — inside and out. Glare at night is made much worse by dirt on the glass. Even the inside of the glass can build up a film caused by dust. Dirty glass makes lights dazzle and flash more than clean glass would, making the pupils of your eyes contract repeatedly.

Remember that the headlamps light up far less of a roadway when you are in a turn or curve. Keep your eyes moving; that way, it is easier to pick out dimly lighted objects. Just as the headlamps should be checked regularly for proper aim, so should your eyes be examined regularly. Some drivers suffer from night blindness — the inability to see in dim light — and are not even aware of it.



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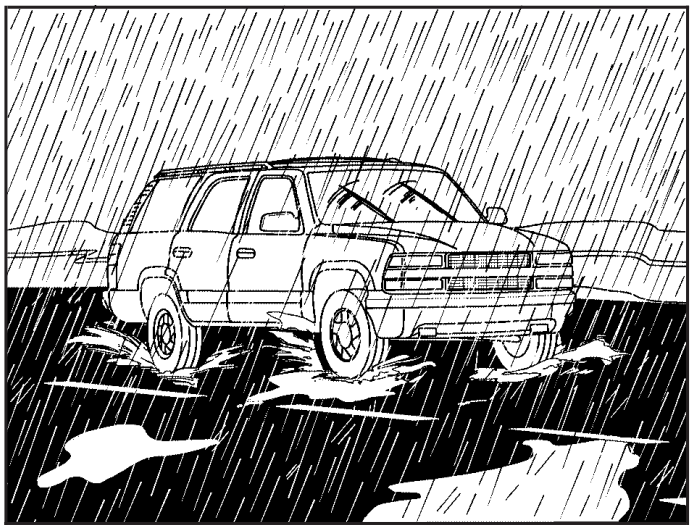
## Driving in Rain and on Wet Roads



Rain and wet roads can mean driving trouble. On a wet road, you cannot stop, accelerate, or turn as well because your tire-to-road traction is not as good as on dry roads. And, if your tires do not have much tread left, you will get even less traction. It is always wise to go slower and be cautious if rain starts to fall while you are driving. The surface may get wet suddenly when your reflexes are tuned for driving on dry pavement.

The heavier the rain, the harder it is to see. Even if your windshield wiper blades are in good shape, a heavy rain can make it harder to see road signs and traffic signals, pavement markings, the edge of the road, and even people walking.

It is wise to keep your wiping equipment in good shape and keep your windshield washer fluid reservoir filled with washer fluid. Replace your windshield wiper inserts when they show signs of streaking or missing areas on the windshield, or when strips of rubber start to separate from the inserts.



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## ⚠ CAUTION:

**Wet brakes can cause accidents. They may not work as well in a quick stop and may cause pulling to one side. You could lose control of the vehicle.**

**After driving through a large puddle of water or a car wash, apply the brake pedal lightly until the brakes work normally.**

Driving too fast through large water puddles or even going through some car washes can cause problems, too. The water may affect your brakes. Try to avoid puddles. But if you cannot, try to slow down before you hit them.

## Hydroplaning

Hydroplaning is dangerous. So much water can build up under your tires that they can actually ride on the water. This can happen if the road is wet enough and you are going fast enough. When your vehicle is hydroplaning, it has little or no contact with the road.

Hydroplaning does not happen often. But it can if your tires do not have much tread or if the pressure in one or more is low. It can happen if a lot of water is standing on the road. If you can see reflections from trees, telephone poles, or other vehicles, and raindrops dimple the water's surface, there could be hydroplaning.

Hydroplaning usually happens at higher speeds. There just is not a hard and fast rule about hydroplaning. The best advice is to slow down when it is raining.

## Driving Through Deep Standing Water

***Notice:*** **If you drive too quickly through deep puddles or standing water, water can come in through the engine's air intake and badly damage the engine. Never drive through water that is slightly lower than the underbody of your vehicle. If you cannot avoid deep puddles or standing water, drive through them very slowly.**



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## Driving Through Flowing Water

**⚠ CAUTION:**

**Flowing or rushing water creates strong forces. If you try to drive through flowing water, as you might at a low water crossing, your vehicle can be carried away. As little as six inches of flowing water can carry away a smaller vehicle. If this happens, you and other vehicle occupants could drown. Do not ignore police warning signs, and otherwise be very cautious about trying to drive through flowing water.**

## Some Other Rainy Weather Tips

- Turn on your low-beam headlamps — not just your parking lamps — to help make you more visible to others.
- Besides slowing down, allow some extra following distance. And be especially careful when you pass another vehicle. Allow yourself more clear room ahead, and be prepared to have your view restricted by road spray.
- Have good tires with proper tread depth. See *Tires on page 398*.



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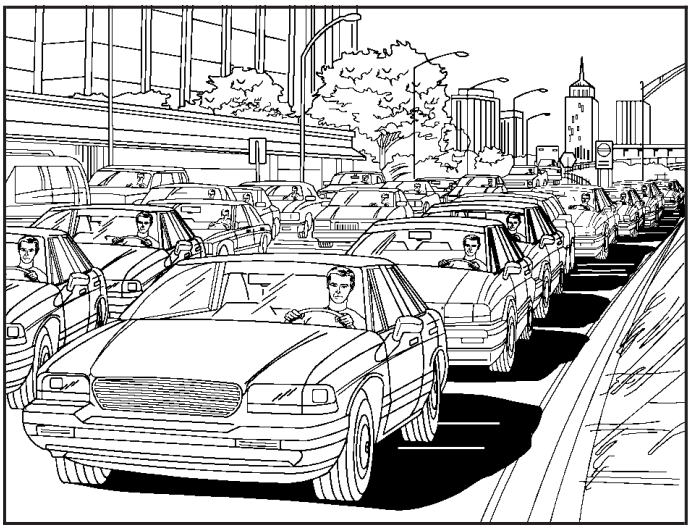
## City Driving



One of the biggest problems with city streets is the amount of traffic on them. You will want to watch out for what the other drivers are doing and pay attention to traffic signals.

Here are ways to increase your safety in city driving:

- Know the best way to get to where you are going. Get a city map and plan your trip into an unknown part of the city just as you would for a cross-country trip.
- Try to use the freeways that rim and crisscross most large cities. You will save time and energy. See *Freeway Driving on page 312*.
- Treat a green light as a warning signal. A traffic light is there because the corner is busy enough to need it. When a light turns green, and just before you start to move, check both ways for vehicles that have not cleared the intersection or may be running the red light.



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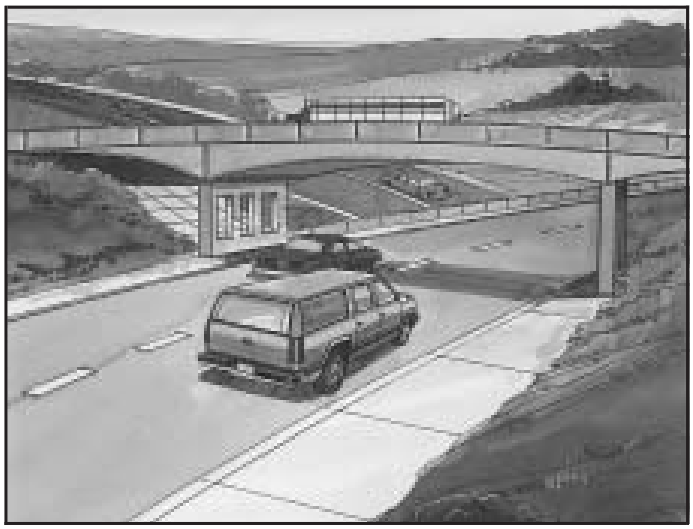
## Freeway Driving



Mile for mile, freeways — also called thruways, parkways, expressways, turnpikes, or superhighways — are the safest of all roads. But they have their own special rules.

The most important advice on freeway driving is: Keep up with traffic and keep to the right. Drive at the same speed most of the other drivers are driving. Too-fast or too-slow driving breaks a smooth traffic flow. Treat the left lane on a freeway as a passing lane.

At the entrance, there is usually a ramp that leads to the freeway. If you have a clear view of the freeway as you drive along the entrance ramp, you should begin to check traffic. Try to determine where you expect to blend with the flow. Try to merge into the gap at close to the prevailing speed. Switch on your turn signal, check your mirrors, and glance over your shoulder as often as necessary. Try to blend smoothly with the traffic flow.

Once you are on the freeway, adjust your speed to the posted limit or to the prevailing rate if it is slower. Stay in the right lane unless you want to pass.



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Before changing lanes, check your mirrors. Then use your turn signal.

Just before you leave the lane, glance quickly over your shoulder to make sure there is not another vehicle in your blind spot.

Once you are moving on the freeway, make certain you allow a reasonable following distance. Expect to move slightly slower at night.

When you want to leave the freeway, move to the proper lane well in advance. If you miss your exit, do not, under any circumstances, stop and back up. Drive on to the next exit.

The exit ramp can be curved, sometimes quite sharply. The exit speed is usually posted.

Reduce your speed according to your speedometer, not to your sense of motion. After driving for any distance at higher speeds, you may tend to think you are going slower than you actually are.

## Before Leaving on a Long Trip

Make sure you are ready. Try to be well rested. If you must start when you are not fresh — such as after a day's work — do not plan to make too many miles that first part of the journey. Wear comfortable clothing and shoes you can easily drive in.

Is your vehicle ready for a long trip? If you keep it serviced and maintained, it is ready to go. If it needs service, have it done before starting out. Of course, you will find experienced and able service experts in GM dealerships all across North America. They will be ready and willing to help if you need it.

Here are some things you can check before a trip:

- *Windshield Washer Fluid:* Is the reservoir full? Are all windows clean inside and outside?
- *Wiper Blades:* Are they in good shape?
- *Fuel, Engine Oil, Other Fluids:* Have you checked all levels?
- *Lamps:* Are they all working? Are the lenses clean?



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- *Tires:* They are vitally important to a safe, trouble-free trip. Is the tread good enough for long-distance driving? Are the tires all inflated to the recommended pressure?
- *Weather Forecasts:* What is the weather outlook along your route? Should you delay your trip a short time to avoid a major storm system?
- *Maps:* Do you have up-to-date maps?

## Highway Hypnosis

Is there actually such a condition as highway hypnosis? Or is it just plain falling asleep at the wheel? Call it highway hypnosis, lack of awareness, or whatever.

There is something about an easy stretch of road with the same scenery, along with the hum of the tires on the road, the drone of the engine, and the rush of the wind against the vehicle that can make you sleepy. Do not let it happen to you! If it does, your vehicle can leave the road in less than a second, and you could crash and be injured.

What can you do about highway hypnosis? First, be aware that it can happen.

Then here are some tips:

- Make sure your vehicle is well ventilated, with a comfortably cool interior.
- Keep your eyes moving. Scan the road ahead and to the sides. Check your vehicle's mirrors and instruments frequently.
- If you get sleepy, pull off the road into a rest, service, or parking area and take a nap, get some exercise, or both. For safety, treat drowsiness on the highway as an emergency.



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## Hill and Mountain Roads

Driving on steep hills or mountains is different from driving in flat or rolling terrain.

If you drive regularly in steep country, or if you are planning to visit there, here are some tips that can make your trips safer and more enjoyable. See *Off-Road Driving on page 291* for information about driving off-road.

- Keep your vehicle in good shape. Check all fluid levels and also the brakes, tires, cooling system, and transmission. These parts can work hard on mountain roads.

**⚠ CAUTION:**

**If you do not shift down, the brakes could get so hot that they would not work well. You would then have poor braking or even none going down a hill. You could crash. Shift down to let the engine assist the brakes on a steep downhill slope.**



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**⚠ CAUTION:**

**Coasting downhill in NEUTRAL (N) or with the ignition off is dangerous. The brakes will have to do all the work of slowing down. They could get so hot that they would not work well. You would then have poor braking or even none going down a hill. You could crash. Always have the engine running and your vehicle in gear when you go downhill.**

- Know how to go down hills. The most important thing to know is this: let your engine do some of the slowing down. Shift to a lower gear when you go down a steep or long hill.
- Know how to go uphill. You may want to shift down to a lower gear. The lower gears help cool your engine and transmission, and you can climb the hill better.
- Stay in your own lane when driving on two-lane roads in hills or mountains. Do not swing wide or cut across the center of the road. Drive at speeds that let you stay in your own lane.
- As you go over the top of a hill, be alert. There could be something in your lane, like a stalled car or an accident.
- You may see highway signs on mountains that warn of special problems. Examples are long grades, passing or no-passing zones, a falling rocks area, or winding roads. Be alert to these and take appropriate action.



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## Winter Driving

Here are some tips for winter driving:

- Have your vehicle in good shape for winter.
- You may want to put winter emergency supplies in your vehicle.

Also see *Tires on page 398*.

Include an ice scraper, a small brush or broom, a supply of windshield washer fluid, a rag, some winter outer clothing, a small shovel, a flashlight, a red cloth, and a couple of reflective warning triangles. And, if you will be driving under severe conditions, include a small bag of sand, a piece of old carpet, or a couple of burlap bags to help provide traction. Be sure you properly secure these items in your vehicle.

### Driving on Snow or Ice

Most of the time, those places where the tires meet the road probably have good traction.

However, if there is snow or ice between the tires and the road, you can have a very slippery situation. You will have a lot less traction, or grip, and will need to be very careful.



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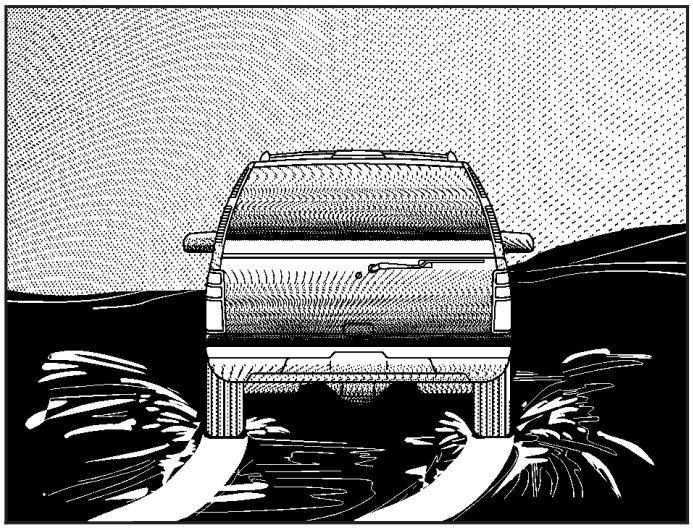

What is the worst time for this? Wet ice. Very cold snow or ice can be slick and hard to drive on. But wet ice can be even more trouble because it may offer the least traction of all. You can get wet ice when it is about freezing, 32°F (0°C), and freezing rain begins to fall. Try to avoid driving on wet ice until salt and sand crews can get there.

Whatever the condition — smooth ice, packed, blowing, or loose snow — drive with caution.

Accelerate gently. Try not to break the fragile traction. If you accelerate too fast, the drive wheels will spin and polish the surface under the tires even more. See *StabiliTrak® System on page 283* and *Rocking Your Vehicle to Get It Out on page 322*. Also see “Winter Tires” under *Tires on page 398*.



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The Anti-Lock Brake System (ABS) improves your vehicle's stability when you make a hard stop on a slippery road. Even though you have ABS, you will want to begin stopping sooner than you would on dry pavement. See *Anti-Lock Brake System (ABS) on page 279*.

- Allow greater following distance on any slippery road.
- Watch for slippery spots. The road might be fine until you hit a spot that is covered with ice. On an otherwise clear road, ice patches may appear in shaded areas where the sun cannot reach, such as around clumps of trees, behind buildings, or under bridges. Sometimes the surface of a curve or an overpass may remain icy when the surrounding roads are clear. If you see a patch of ice ahead of you, brake before you are on it. Try not to brake while you are actually on the ice, and avoid sudden steering maneuvers.

## If You Are Caught in a Blizzard

If you are stopped by heavy snow, you could be in a serious situation. You should probably stay with your vehicle unless you know for sure that you are near help and you can hike through the snow. Here are some things to do to summon help and keep yourself and your passengers safe:

- Turn on your hazard flashers.
- Tie a red cloth to your vehicle to alert police that you have been stopped by the snow.
- Put on extra clothing or wrap a blanket around you. If you do not have blankets or extra clothing, make body insulators from newspapers, burlap bags, rags, floor mats — anything you can wrap around yourself or tuck under your clothing to keep warm.



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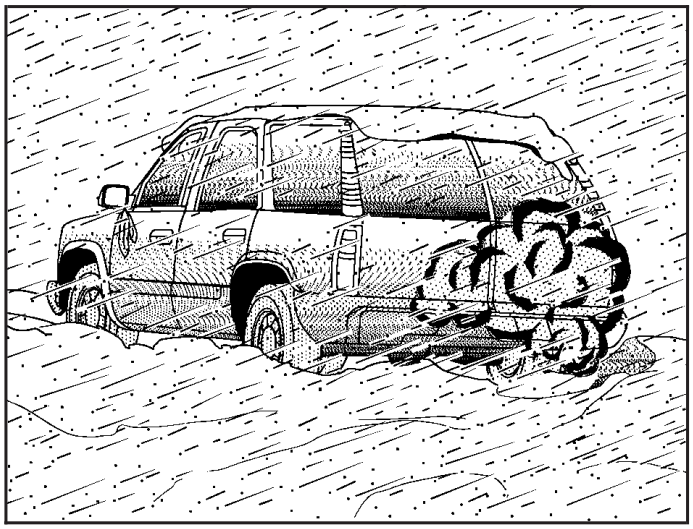

You can run the engine to keep warm, but be careful.

**⚠ CAUTION:**

**Snow can trap exhaust gases under your vehicle. This can cause deadly CO (carbon monoxide) gas to get inside. CO could overcome you and kill you. You cannot see it or smell it, so you might not know it is in your vehicle. Clear away snow from around the base of your vehicle, especially any that is blocking the exhaust pipe. And check around again from time to time to be sure snow does not collect there.**

**Open a window just a little on the side of the vehicle that is away from the wind. This will help keep CO out.**

Run your engine only as long as you must. This saves fuel. When you run the engine, make it go a little faster than just idle. That is, push the accelerator slightly. This uses less fuel for the heat that you get and it keeps the battery charged.



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You will need a well-charged battery to restart the vehicle, and possibly for signaling later on with your headlamps. Let the heater run for a while.

Then, shut the engine off and close the window almost all the way to preserve the heat. Start the engine again and repeat this only when you feel really uncomfortable from the cold. But do it as little as possible. Preserve the fuel as long as you can. To help keep warm, you can get out of the vehicle and do some fairly vigorous exercises every half hour or so until help comes.

## If Your Vehicle is Stuck in Sand, Mud, Ice, or Snow

In order to free your vehicle when it is stuck, you need to spin the wheels, but you do not want to spin the wheels too fast. The method known as rocking can help you get out when you are stuck, but you must use caution.

**⚠ CAUTION:**

**If you let your vehicle's tires spin at high speed, they can explode, and you or others could be injured. And, the transmission or other parts of the vehicle can overheat. That could cause an engine compartment fire or other damage. When you are stuck, spin the wheels as little as possible. Do not spin the wheels above 35 mph (55 km/h) as shown on the speedometer.**

***Notice:*** **Spinning the wheels can destroy parts of your vehicle as well as the tires. If you spin the wheels too fast while shifting the transmission back and forth, you can destroy the transmission.**

For information about using tire chains on your vehicle, see *Tire Chains on page 422*.



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## Rocking Your Vehicle to Get It Out

First, turn the steering wheel left and right. That will clear the area around the front wheels. Turn the StabiliTrak® System off. See *StabiliTrak® System on page 283*. Then shift back and forth between REVERSE (R) and a forward gear, spinning the wheels as little as possible. Release the accelerator pedal while you shift, and press lightly on the accelerator pedal when the transmission is in gear. By slowly spinning the wheels in the forward and reverse directions, you will cause a rocking motion that may free your vehicle. If that does not get your vehicle out after a few tries, it may need to be towed out. Or, you can use the recovery hook if your vehicle has one. If your vehicle does need to be towed out, see *Towing Your Vehicle on page 328*.

## Loading Your Vehicle

It is very important to know how much weight your vehicle can carry. This weight is called the vehicle capacity weight and includes the weight of all occupants, cargo, and all nonfactory-installed options. Two labels on your vehicle show how much weight it may properly carry, the Tire and Loading Information label and the Certification/Tire label.

**⚠ CAUTION:**

**Do not load your vehicle any heavier than the Gross Vehicle Weight Rating (GVWR), or either the maximum front or rear Gross Axle Weight Rating (GAWR). If you do, parts on your vehicle can break, and it can change the way your vehicle handles. These could cause you to lose control and crash. Also, overloading can shorten the life of your vehicle.**



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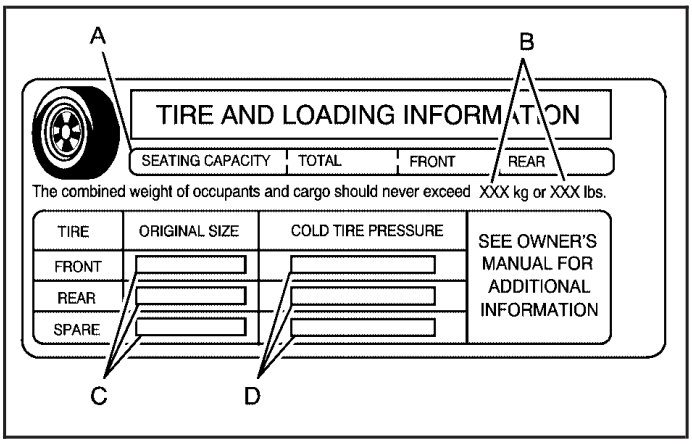
## Tire and Loading Information Label




**Label Example**

A vehicle specific Tire and Loading Information label is attached to the center pillar (B-pillar). With the driver's door open, you will find the label attached below the door lock post (striker). The tire and loading information label shows the number of occupant seating positions (A), and the maximum vehicle capacity weight (B) in kilograms and pounds.

The Tire and Loading Information label also shows the size of the original equipment tires (C) and the recommended cold tire inflation pressures (D). For more information on tires and inflation see *Tires on page 398* and *Inflation - Tire Pressure on page 407*.

There is also important loading information on the vehicle Certification/Tire label. It tells you the Gross Vehicle Weight Rating (GVWR) and the Gross Axle Weight Rating (GAWR) for the front and rear axle. See "Certification/Tire Label" later in this section.



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### Steps for Determining Correct Load Limit

1. Locate the statement “The combined weight of occupants and cargo should never exceed XXX kg or XXX lbs” on your vehicle’s placard.
2. Determine the combined weight of the driver and passengers that will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX kg or XXX lbs.
4. The resulting figure equals the available amount of cargo and luggage load capacity. For example, if the “XXX” amount equals 1400 lbs and there will be five 150 lb passengers in your vehicle, the amount of available cargo and luggage load capacity is 650 lbs (1400 – 750 (5 x 150) = 650 lbs).
5. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity calculated in Step 4.
6. If your vehicle will be towing a trailer, the load from your trailer will be transferred to your vehicle. Consult this manual to determine how this reduces the available cargo and luggage load capacity of your vehicle.

   If your vehicle can tow a trailer, see *Towing a Trailer on page 331* for important information on towing a trailer, towing safety rules, and trailering tips.



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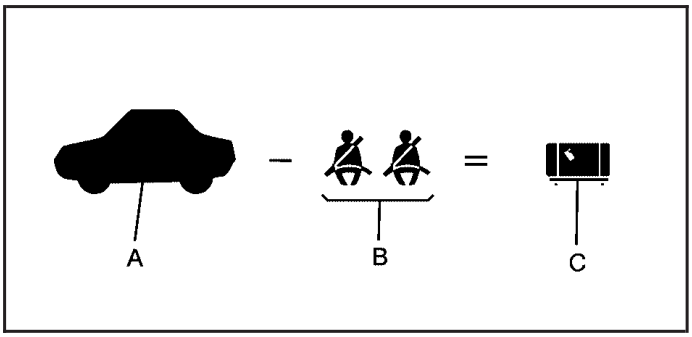
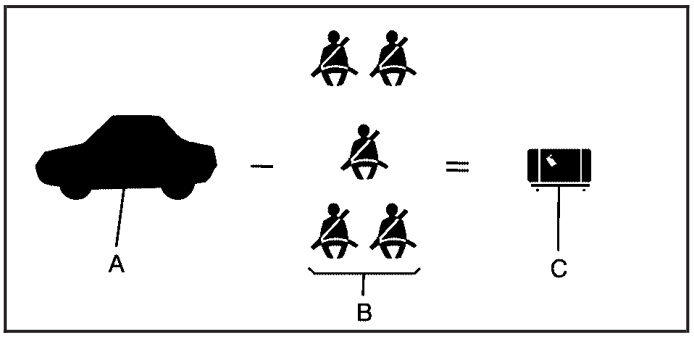



**Example 1**

| Item | Description | Total |
|---|---|---|
| A | Vehicle Capacity Weight for Example 1 = | 1,000 lbs (453 kg) |
| B | Subtract Occupant Weight 150 lbs (68 kg) × 2 = | 300 lbs (136 kg) |
| C | Available Occupant and Cargo Weight = | 700 lbs (317 kg) |




**Example 2**

| Item | Description | Total |
|---|---|---|
| A | Vehicle Capacity Weight for Example 2 = | 1,000 lbs (453 kg) |
| B | Subtract Occupant Weight 150 lbs (68 kg) × 5 = | 750 lbs (340 kg) |
| C | Available Cargo Weight = | 250 lbs (113 kg) |



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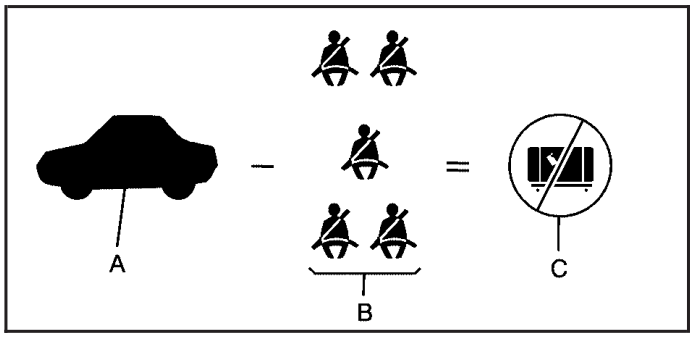
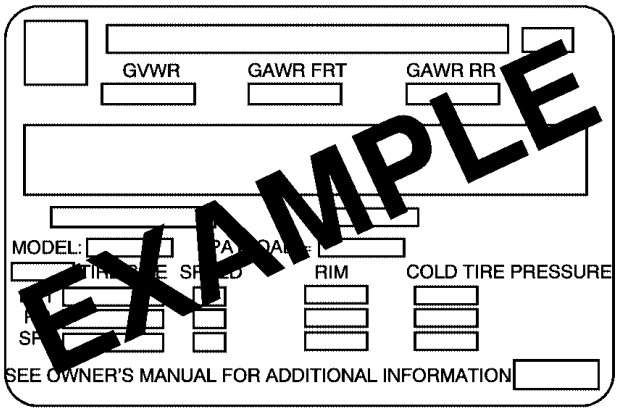



**Example 3**

| Item | Description | Total |
|---|---|---|
| A | Vehicle Capacity Weight for Example 3 = | 1,000 lbs (453 kg) |
| B | Subtract Occupant Weight 200 lbs (91 kg) × 5 = | 1,000 lbs (453 kg) |
| C | Available Cargo Weight = | 0 lbs (0 kg) |

Refer to your vehicle's Tire and Loading Information label for specific information about your vehicle's capacity weight and seating positions. The combined weight of the driver, passengers, and cargo should never exceed your vehicle's capacity weight.

## Certification/Tire Label




**United States version shown, Canada similar**

A vehicle specific Certification/Tire label is attached to either the driver's door edge or the lower center pillar on the driver's side of the vehicle. This label shows the gross weight capacity of your vehicle and is called the Gross Vehicle Weight Rating (GVWR). The GVWR includes the weight of the vehicle, all occupants, fuel, cargo, and trailer tongue weight, if pulling a trailer.



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The Certification/Tire label also tells you the maximum weights for the front and rear axles, called Gross Axle Weight Rating (GAWR). To find out the actual loads on your front and rear axles, you need to go to a weigh station and weigh your vehicle. Your dealer can help you with this. Be sure to spread out your load equally on both sides of the centerline.

Never exceed the GVWR for your vehicle, or the GAWR for either the front or rear axle.

And, if you do have a heavy load, you should spread it out.

Similar appearing vehicles may have different GVWRs and payloads. Please note the Certification/Tire label on your truck or consult your dealer for additional details.

**⚠ CAUTION:**

**Do not load your vehicle any heavier than the Gross Vehicle Weight Rating (GVWR), or either the maximum front or rear Gross Axle Weight Rating (GAWR). If you do, parts on your vehicle can break, and it can change the way your vehicle handles. These could cause you to lose control and crash. Also, overloading can shorten the life of your vehicle.**



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If you put things inside your vehicle — like suitcases, tools, packages, or anything else — they will go as fast as the vehicle goes. If you have to stop or turn quickly, or if there is a crash, they will keep going.

**⚠ CAUTION:**

**Things you put inside your vehicle can strike and injure people in a sudden stop or turn, or in a crash.**

- **Put things in the cargo area of your vehicle. Try to spread the weight evenly.**
- **Never stack heavier things, like suitcases, inside the vehicle so that some of them are above the tops of the seats.**
- **Do not leave an unsecured child restraint in your vehicle.**
- **When you carry something inside the vehicle, secure it whenever you can.**
- **Do not leave a seat folded down unless you need to.**

There is also important loading information for off-road driving in this manual. See *Off-Road Driving on page 291*.

# Towing

## Towing Your Vehicle

Consult your dealer or a professional towing service if you need to have your disabled vehicle towed. See *Roadside Service on page 493*.

If you want to tow your vehicle behind another vehicle for recreational purposes (such as behind a motorhome), see Recreational Vehicle Towing following.

## Recreational Vehicle Towing

Recreational vehicle towing means towing your vehicle behind another vehicle – such as behind a motorhome. The two most common types of recreational vehicle towing are known as “dinghy towing” (towing your vehicle with all four wheels on the ground) and “dolly towing” (towing your vehicle with two wheels on the ground and two wheels up on a device known as a “dolly”).



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With the proper preparation and equipment, many vehicles can be towed in these ways. See “Dinghy Towing” and “Dolly Towing,” following.

Here are some important things to consider before you do recreational vehicle towing:

- What’s the towing capacity of the towing vehicle? Be sure you read the tow vehicle manufacturer’s recommendations.
- How far will you tow? Some vehicles have restrictions on how far and how long they can tow.
- Do you have the proper towing equipment? See your dealer or trailering professional for additional advice and equipment recommendations.
- Is your vehicle ready to be towed? Just as you would prepare your vehicle for a long trip, you’ll want to make sure your vehicle is prepared to be towed. See *Before Leaving on a Long Trip on page 313*.

## Dinghy Towing

***Notice:*** **If you tow your vehicle with all four wheels on the ground, the drivetrain components could be damaged. The repairs would not be covered by your warranty. Do not tow your vehicle with all four wheels on the ground.**

Your vehicle was not designed to be towed with all four wheels on the ground. If your vehicle must be towed, see “Dolly Towing” following for more information.

## Dolly Towing

***Notice:*** **Towing an all-wheel-drive vehicle with all four wheels on the ground, or even with only two of its wheels on the ground, will damage drivetrain components. Do not tow an all-wheel-drive vehicle if any of its wheels will be on the ground.**



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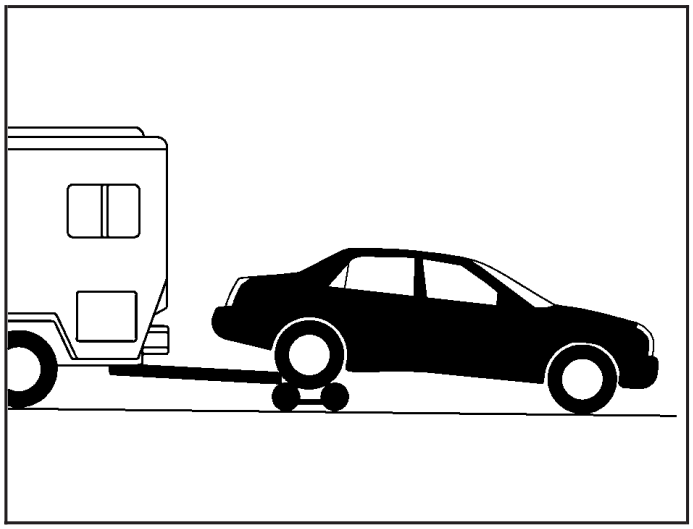

If you have a Rear-Wheel Drive (RWD) vehicle, it can be towed using a dolly. If you have an All-Wheel-Drive (AWD) vehicle, it can only be towed on a flat-bed trailer. To tow your RWD vehicle using a dolly, follow these steps:

1. Put the rear wheels on the dolly.
2. Put the vehicle in PARK (P).
3. Set the parking brake and then remove the key.
4. Clamp the steering wheel in a straight-ahead position with a clamping device designed for towing.
5. Release the parking brake.

## Level Control

This feature keeps the rear of your vehicle level as the load changes. It's automatic — you don't need to adjust anything.



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## Towing a Trailer

### ⚠ CAUTION:

**If you do not use the correct equipment and drive properly, you can lose control when you pull a trailer. For example, if the trailer is too heavy, the brakes may not work well — or even at all. You and your passengers could be seriously injured. You may also damage your vehicle; the resulting repairs would not be covered by your warranty. Pull a trailer only if you have followed all the steps in this section. Ask your dealer for advice and information about towing a trailer with your vehicle.**

Your vehicle can tow a trailer if it is equipped with the proper trailer towing equipment. To identify the trailering capacity of your vehicle, you should read the information in “Weight of the Trailer” that appears later in this section. But trailering is different than just driving your vehicle by itself.

Trailering means changes in handling, acceleration, braking, durability and fuel economy. Successful, safe trailering takes correct equipment, and it has to be used properly.

That’s the reason for this part. In it are many time-tested, important trailering tips and safety rules. Many of these are important for your safety and that of your passengers. So please read this section carefully before you pull a trailer.

Load-pulling components such as the engine, transmission, rear axle, wheel assemblies and tires are forced to work harder against the drag of the added weight. The engine is required to operate at relatively higher speeds and under greater loads, generating extra heat. What’s more, the trailer adds considerably to wind resistance, increasing the pulling requirements.



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## If You Do Decide to Pull a Trailer

If you do, here are some important points:

- There are many different laws, including speed limit restrictions, having to do with trailering. Make sure your rig will be legal, not only where you live but also where you'll be driving. A good source for this information can be state or provincial police.
- Consider using a sway control. You can ask a hitch dealer about sway controls.
- Don't tow a trailer at all during the first 500 miles (805 km) your new vehicle is driven. Your engine, axle or other parts could be damaged.
- Then, during the first 500 miles (805 km) that you tow a trailer, don't drive over 50 mph (80 km/h) and don't make starts at full throttle. This helps your engine and other parts of your vehicle wear in at the heavier loads.
- Obey speed limit restrictions when towing a trailer. Don't drive faster than the maximum posted speed for trailers, or no more than 55 mph (90 km/h), to save wear on your vehicle's parts.

Three important considerations have to do with weight:

- the weight of the trailer
- the weight of the trailer tongue
- and the total weight on your vehicle's tires



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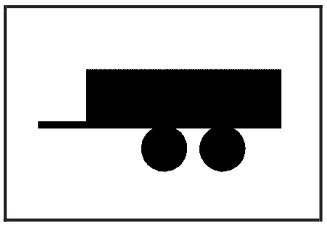
## Tow/Haul Mode

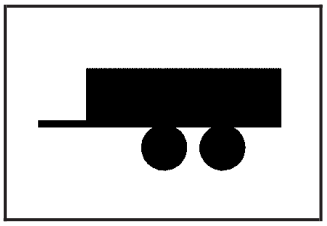
Tow/haul is designed to assist while your vehicle is pulling a large or heavy load or trailer. Tow/haul is most useful while pulling such a load in rolling terrain, in stop-and-go traffic, or when you need improved low-speed control, such as when parking. The purpose of the tow/haul mode is to do the following:

- Reduce the frequency and improve the predictability of transmission shifts when pulling a heavy trailer or a large or heavy load.
- Provide the same solid shift feel when pulling a heavy trailer or a large or heavy load as when the vehicle is unloaded.
- Improve control of vehicle speed while requiring less throttle pedal activity when pulling a heavy trailer or a large or heavy load.

Tow/haul is designed to be most effective when the vehicle and trailer combined weight is at least 75 percent of the vehicle's Gross Combination Weight Rating (GCWR). See "Weight of the Trailer" later in this section.



Press this button, located on the console, to enable/disable the tow/haul mode.



A light on the instrument panel will illuminate to indicate that tow/haul mode has been selected.

The vehicle will automatically turn off tow/haul every time it is started.

Driving with tow/haul activated without a heavy load or with no trailer will cause reduced fuel economy and unpleasant engine and transmission driving characteristics, but will not cause damage.



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Operating the vehicle in tow/haul when lightly loaded or with no trailer at all will not cause damage. However, there is no benefit to the selection of tow/haul when the vehicle is unloaded. Such a selection when unloaded may result in unpleasant engine and transmission driving characteristics and reduced fuel economy. Tow/haul is recommended only when pulling a heavy trailer or a large or heavy load.

## Weight of the Trailer

How heavy can a trailer safely be?

It depends on how you plan to use your rig. For example, speed, altitude, road grades, outside temperature and how much your vehicle is used to pull a trailer are all important. It can also depend on any special equipment that you have on your vehicle, and the amount of tongue weight the vehicle can carry. See “Weight of the Trailer Tongue” later in this section for more information.

Maximum trailer weight is calculated assuming only the driver is in the tow vehicle and it has all the required trailering equipment. The weight of additional optional equipment, passengers and cargo in the tow vehicle must be subtracted from the maximum trailer weight.

Look in the following chart to find the maximum trailer weight for your vehicle.

| Package | Maximum Trailer Weight | *GCWR |
|---|---|---|
| Base | 2,000 lbs (907 kg) | 6,853 lbs (3 808 kg) |
| V92 | 4,250 lbs (1 928 kg) | 9,353 lbs (4 242 kg) |

*The Gross Combination Weight Rating (GCWR) is the total allowable weight of the completely loaded vehicle and trailer including any passengers, cargo, equipment and conversions. The GCWR for your vehicle should not be exceeded.

You can ask your dealer for our trailering information or advice, or you can write us at:

Cadillac Customer Assistance Center
Cadillac Motor Car Division
P.O. Box 33169
Detroit, MI 48232-5169

In Canada, write to:

General Motors of Canada Limited
Customer Communication Centre, 163-005
1908 Colonel Sam Drive
Oshawa,
Ontario L1H 8P7



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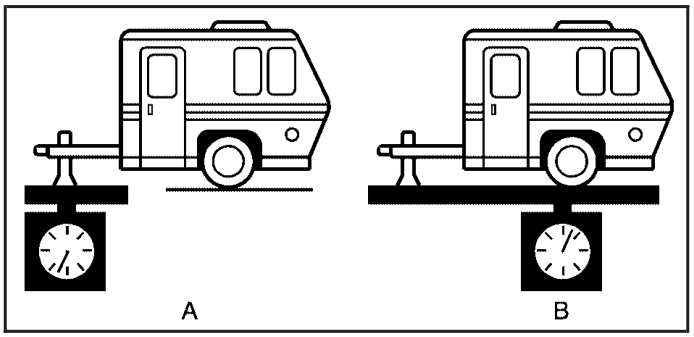
## Weight of the Trailer Tongue

The tongue load (A) of any trailer is an important weight to measure because it affects the total or gross weight of your vehicle. The Gross Vehicle Weight (GVW) includes the curb weight of the vehicle, any cargo you may carry in it, and the people who will be riding in the vehicle. If you have a lot of options, equipment, passengers or cargo in the vehicle, it will reduce the tongue weight your vehicle can carry, which will also reduce the trailer weight your vehicle can tow. And if you tow a trailer, you must add the tongue load to the GVW because your vehicle will be carrying that weight, too. See *Loading Your Vehicle on page 322* for more information about your vehicle's maximum load capacity.




If you're using a weight-carrying hitch or a weight-distributing hitch, the trailer tongue (A) should weigh 10-15 percent of the total loaded trailer weight (B).

After you've loaded your trailer, weigh the trailer and then the tongue, separately, to see if the weights are proper. If they aren't, you may be able to get them right simply by moving some items around in the trailer.

Trailering may also be limited by the vehicle's ability to carry tongue weight. Tongue weight cannot cause the vehicle to exceed the GVWR (Gross Vehicle Weight Rating) or the RGAWR (Rear Gross Axle Weight Rating). The effect of additional weight may reduce your trailering capacity more than the total of the additional weight.



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Consider the following example:

A vehicle model base weight is 5,500 lbs (2 495 kg); 2,800 lbs (1 270 kg) at the front axle and 2,700 lbs (1 225 kg) at the rear axle. It has a GVWR of 7,200 lbs (3 266 kg), a RGAWR of 4,000 lbs (1 814 kg) and a GCWR (Gross Combination Weight Rating) of 14,000 lbs (6 350 kg). The trailer rating should be:

| | |
|---|---|
| 14,000 lbs (6350 kg) | GCWR |
| −5,500 lbs (2495 kg) | Vehicle Weight |
| 8,500 lbs (3855 kg) | Trailer Rating |

You can expect tongue weight to be at least 10 percent of trailer weight (850 lbs (386 kg)) and because the weight is applied well behind the rear axle, the effect on the rear axle will be greater than just the weight itself, as much as 1.5 times as much. The weight at the rear axle could be 850 lbs (386 kg) X 1.5 = 1,275 lbs (578 kg). Since the rear axle already weighs 2,700 lbs (1 225 kg), adding 1,275 lbs (578 kg) brings the total to 3,975 lbs (1 803 kg).

This is very close to, but within the limit for RGAWR as well. The vehicle is set to trailer up to 8,500 lbs (3 856 kg).

But let's say your specific vehicle is equipped with some of the latest options and you have a front seat passenger and two rear seat passengers with some luggage and gear in the vehicle as well. You may add 300 lbs (136 kg) to the front axle weight and 400 lbs (181 kg) to the rear axle weight. Your vehicle now weighs:

| | | | |
|---|---|---|---|
| 2,800 lbs (1270 kg) | + | 300 lbs (136 kg) | Front |
| 2,700 lbs (1225 kg) | + | 400 lbs (181 kg) | Rear |
| 6,200 lbs (2812 kg) | | | Total |

Weight is still below 7,200 lbs (3 266 kg) and you may think that you should subtract 700 additional pounds (318 kg) from your trailering capacity to stay within GCWR limits. Your maximum trailer would only be 7,800 lbs (3 538 kg). You may go further and think you must limit tongue weight to less than 1,000 lbs (454 kg) to avoid exceeding GVWR. But, you must still consider the effect on the rear axle.



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Because your rear axle now weighs 3,100 lbs (1 406 kg), you can only put 900 lbs (408 kg) on the rear axle without exceeding RGAWR. The effect of tongue weight is about 1.5 times the actual weight. Dividing the 900 lbs (408 kg) by 1.5 leaves you with being able to handle only 600 lbs (272 kg) of tongue weight. Since tongue weight is usually at least 10 percent of total loaded trailer weight, you can expect that the largest trailer your vehicle can properly handle is 6,000 lbs (2 721 kg).

It is important that you make sure your vehicle does not exceed any of its ratings — GCWR, GVWR, RGAWR, Maximum Trailer Rating or Tongue Weight. The only way to be sure you are not exceeding any of these ratings is to weigh your vehicle and trailer.

## Total Weight on Your Vehicle's Tires

Be sure your vehicle's tires are inflated to the upper limit for cold tires. You'll find these numbers on the Certification/Tire label. See *Loading Your Vehicle on page 322*. Then be sure you don't go over the GVW limit for your vehicle, including the weight of the trailer tongue.

## Hitches

It's important to have the correct hitch equipment. Crosswinds, large trucks going by and rough roads are a few reasons why you'll need the right hitch. Here are some rules to follow:

- The rear bumper on your vehicle is not intended for hitches. Do not attach rental hitches or other bumper-type hitches to it. Use only a frame-mounted hitch that does not attach to the bumper.
- Will you have to make any holes in the body of your vehicle when you install a trailer hitch? If you do, then be sure to seal the holes later when you remove the hitch. If you don't seal them, deadly carbon monoxide (CO) from your exhaust can get into your vehicle. See *Engine Exhaust on page 132*. Dirt and water can, too.



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## Safety Chains

You should always attach chains between your vehicle and your trailer. Cross the safety chains under the tongue of the trailer so that the tongue will not drop to the road if it becomes separated from the hitch. Instructions about safety chains may be provided by the hitch manufacturer or by the trailer manufacturer. Follow the manufacturer's recommendation for attaching safety chains and do not attach them to the bumper. Always leave just enough slack so you can turn with your rig. And, never allow safety chains to drag on the ground.

## Trailer Brakes

If you tow more than 1,000 lbs (450 kg), use trailer brakes. Because your vehicle has anti-lock brakes, don't try to tap into your vehicle's hydraulic brake system. If you do, both brake systems won't work well, or at all.

Be sure to read and follow the instructions for the trailer brakes so you'll be able to install, adjust and maintain them properly.

## Driving with a Trailer

Towing a trailer requires a certain amount of experience. Before setting out for the open road, you'll want to get to know your rig. Acquaint yourself with the feel of handling and braking with the added weight of the trailer. And always keep in mind that the vehicle you are driving is now a good deal longer and not nearly as responsive as your vehicle is by itself.

Before you start, check all trailer hitch parts and attachments, safety chains, electrical connector, lamps, tires and mirror adjustment. If the trailer has electric brakes, start your vehicle and trailer moving and then apply the trailer brake controller by hand to be sure the brakes are working. This lets you check your electrical connection at the same time.

During your trip, check occasionally to be sure that the load is secure, and that the lamps and any trailer brakes are still working.



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## Following Distance

Stay at least twice as far behind the vehicle ahead as you would when driving your vehicle without a trailer. This can help you avoid situations that require heavy braking and sudden turns.

## Passing

You'll need more passing distance up ahead when you're towing a trailer. And, because you're a good deal longer, you'll need to go much farther beyond the passed vehicle before you can return to your lane.

## Backing Up

Hold the bottom of the steering wheel with one hand. Then, to move the trailer to the left, just move that hand to the left. To move the trailer to the right, move your hand to the right. Always back up slowly and, if possible, have someone guide you.

## Making Turns

***Notice:*** **Making very sharp turns while trailering could cause the trailer to come in contact with the vehicle. Your vehicle could be damaged. Avoid making very sharp turns while trailering.**

When you're turning with a trailer, make wider turns than normal. Do this so your trailer won't strike soft shoulders, curbs, road signs, trees or other objects. Avoid jerky or sudden maneuvers. Signal well in advance.

## Turn Signals When Towing a Trailer

When you tow a trailer, your vehicle may need a different turn signal flasher and/or extra wiring. Check with your dealer. The arrows on your instrument panel will flash whenever you signal a turn or lane change. Properly hooked up, the trailer lamps will also flash, telling other drivers you're about to turn, change lanes or stop.

When towing a trailer, the arrows on your instrument panel will flash for turns even if the bulbs on the trailer are burned out. Thus, you may think drivers behind you are seeing your signal when they are not. It's important to check occasionally to be sure the trailer bulbs are still working.



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## Driving on Grades

Reduce speed and shift to a lower gear before you start down a long or steep downgrade. If you don't shift down, you might have to use your brakes so much that they would get hot and no longer work well.

On a long uphill grade, shift down and reduce your speed to around 45 mph (70 km/h) to reduce the possibility of the engine and the transmission overheating.

## Parking on Hills

**⚠ CAUTION:**

**You really should not park your vehicle, with a trailer attached, on a hill. If something goes wrong, your rig could start to move. People can be injured, and both your vehicle and the trailer can be damaged.**

But if you ever have to park your rig on a hill, here's how to do it:

1. Apply your regular brakes, but don't shift into PARK (P).

   When parking uphill, turn your wheels away from the curb. When parking downhill, turn your wheels into the curb.
2. Have someone place chocks behind the trailer wheels.
3. When the chocks are in place, release the regular brakes until the chocks absorb the load.
4. Reapply the regular brakes. Then apply your parking brake and shift into PARK (P).
5. Release the regular brakes.



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## When You Are Ready to Leave After Parking on a Hill

1. Apply your regular brakes and hold the pedal down while you:
   - start your engine,
   - shift into a gear, and
   - release the parking brake.
2. Let up on the brake pedal.
3. Drive slowly until the trailer is clear of the chocks.
4. Stop and have someone pick up and store the chocks.

## Maintenance When Trailer Towing

Your vehicle will need service more often when you're pulling a trailer. See *Scheduled Maintenance on page 471* for more information. Things that are especially important in trailer operation are automatic transmission fluid (don't overfill), engine oil, axle lubricant, drive belt, cooling system and brake system. Each of these is covered in this manual, and the Index will help you find them quickly. If you're trailering, it's a good idea to review this information before you start your trip.

Check periodically to see that all hitch nuts and bolts are tight.

## Engine Cooling When Trailer Towing

Your cooling system may temporarily overheat during severe operating conditions. See *Engine Overheating on page 372*.



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## NOTES



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## Service

Your dealer knows your vehicle best and wants you to be happy with it. We hope you will go to your dealer for all your service needs. You will get genuine GM parts and GM-trained and supported service people.

We hope you will want to keep your GM vehicle all GM. Genuine GM parts have one of these marks:

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## Accessories and Modifications

When you add non-GM accessories to your vehicle they can affect your vehicle's performance and safety, including such things as, airbags, braking, stability, ride and handling, emissions systems, aerodynamics, durability, and electronic systems like anti-lock brakes, traction control and stability control. Some of these accessories may even cause malfunction or damage not covered by warranty.

GM Accessories are designed to complement and function with other systems on your vehicle. Your GM dealer can accessorize your vehicle using genuine GM Accessories. When you go to your GM dealer and ask for GM Accessories, you will know that GM-trained and supported service technicians will perform the work using genuine GM Accessories.

## California Proposition 65 Warning

Most motor vehicles, including this one, contain and/or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Engine exhaust, many parts and systems (including some inside the vehicle), many fluids, and some component wear by-products contain and/or emit these chemicals.



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## Doing Your Own Service Work

**⚠ CAUTION:**

**You can be injured and your vehicle could be damaged if you try to do service work on a vehicle without knowing enough about it.**

- **Be sure you have sufficient knowledge, experience, the proper replacement parts, and tools before you attempt any vehicle maintenance task.**
- **Be sure to use the proper nuts, bolts, and other fasteners. English and metric fasteners can be easily confused. If you use the wrong fasteners, parts can later break or fall off. You could be hurt.**

If you want to do some of your own service work, you should use the proper service manual. It tells you much more about how to service your vehicle than this manual can. To order the proper service manual, see *Service Publications Ordering Information on page 505*.

Your vehicle has an airbag system. Before attempting to do your own service work, see *Servicing Your Airbag-Equipped Vehicle on page 87*.

You should keep a record with all parts receipts and list the mileage and the date of any service work you perform. See *Maintenance Record on page 484*.

## Adding Equipment to the Outside of Your Vehicle

Things you might add to the outside of your vehicle can affect the airflow around it. This may cause wind noise and affect windshield washer performance. Check with your dealer before adding equipment to the outside of your vehicle.



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# Fuel

Use of the recommended fuel is an important part of the proper maintenance of your vehicle. To help keep your engine clean and maintain optimum vehicle performance, GM recommends the use of gasoline advertised as TOP TIER Detergent Gasoline.

The 8th digit of your Vehicle Identification Number (VIN) shows the code letter or number that identifies your engine. You will find the VIN at the top left of the instrument panel. See *Vehicle Identification Number (VIN) on page 453*.

## Gasoline Octane

If your vehicle has the 3.6L V6 engine (VIN Code 7), use regular unleaded gasoline with a posted octane rating of 87 or higher. For best performance or trailer towing, you may choose to use middle grade 89 octane unleaded gasoline.

If the octane rating is less than 87, you may notice an audible knocking noise when you drive, commonly referred to as spark knock. If this occurs, use a gasoline rated at 87 octane or higher as soon as possible. If you are using gasoline rated at 87 octane or higher and you hear heavy knocking, your engine needs service.

If your vehicle has the 4.6L V8 engine (VIN Code A), use premium unleaded gasoline with a posted octane rating of 91 or higher. You may also use regular unleaded gasoline rated at 87 octane or higher, but your vehicle's acceleration may be slightly reduced, and you may notice a slight audible knocking noise, commonly referred to as spark knock. If the octane is less than 87, you may notice a heavy knocking noise when you drive. If this occurs, use a gasoline rated at 87 octane or higher as soon as possible. Otherwise, you might damage your engine. If you are using gasoline rated at 87 octane or higher and you hear heavy knocking, your engine needs service.



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## Gasoline Specifications

At a minimum, gasoline should meet ASTM specification D 4814 in the United States or CAN/CGSB-3.5 in Canada. Some gasolines may contain an octane-enhancing additive called methylcyclopentadienyl manganese tricarbonyl (MMT). General Motors recommends against the use of gasolines containing MMT. See *Additives on page 350* for additional information.

## California Fuel

If your vehicle is certified to meet California Emissions Standards, it is designed to operate on fuels that meet California specifications. See the underhood emission control label. If this fuel is not available in states adopting California emissions standards, your vehicle will operate satisfactorily on fuels meeting federal specifications, but emission control system performance may be affected. The malfunction indicator lamp may turn on and your vehicle may fail a smog-check test.

See *Malfunction Indicator Lamp on page 208*. If this occurs, return to your authorized GM dealer for diagnosis. If it is determined that the condition is caused by the type of fuel used, repairs may not be covered by your warranty.

## Additives

To provide cleaner air, all gasolines in the United States are now required to contain additives that will help prevent engine and fuel system deposits from forming, allowing your emission control system to work properly. In most cases, you should not have to add anything to your fuel. However, some gasolines contain only the minimum amount of additive required to meet U.S. Environmental Protection Agency regulations. To help keep fuel injectors and intake valves clean, or if your vehicle experiences problems due to dirty injectors or valves, look for gasoline that is advertised as TOP TIER Detergent Gasoline. Also, your dealer has additives that will help correct and prevent most deposit-related problems.



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Gasolines containing oxygenates, such as ethers and ethanol, and reformulated gasolines may be available in your area. General Motors recommends that you use these gasolines if they comply with the specifications described earlier. However, E85 (85% ethanol) and other fuels containing more than 10% ethanol must not be used in vehicles that were not designed for those fuels.

***Notice:*** **Your vehicle was not designed for fuel that contains methanol. Do not use fuel containing methanol. It can corrode metal parts in the fuel system and also damage plastic and rubber parts. That damage would not be covered under your warranty.**

Some gasolines that are not reformulated for low emissions may contain an octane-enhancing additive called methylcyclopentadienyl manganese tricarbonyl (MMT); ask the attendant where you buy gasoline whether the fuel contains MMT. General Motors recommends against the use of such gasolines. Fuels containing MMT can reduce the life of spark plugs and the performance of the emission control system may be affected. The malfunction indicator lamp may turn on. If this occurs, return to your dealer for service.

## Fuels in Foreign Countries

If you plan on driving in another country outside the United States or Canada, the proper fuel might be hard to find. Never use leaded gasoline or any other fuel not recommended in the previous text on fuel. Costly repairs caused by use of improper fuel would not be covered by your warranty.

To check the fuel availability, ask an auto club, or contact a major oil company that does business in the country where you will be driving.



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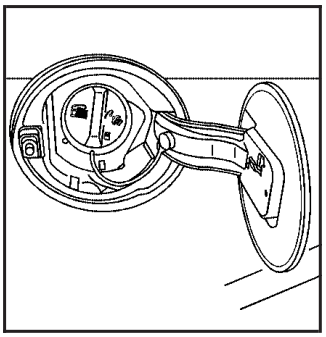
## Filling the Tank

### ⚠ CAUTION:

**Fuel vapor burns violently and a fuel fire can cause bad injuries. To help avoid injuries to you and others, read and follow all the instructions on the pump island. Turn off your engine when you are refueling. Do not smoke if you are near fuel or refueling your vehicle. Do not use cellular phones. Keep sparks, flames, and smoking materials away from fuel. Do not leave the fuel pump unattended when refueling your vehicle. This is against the law in some places. Do not re-enter vehicle while pumping fuel. Keep children away from the fuel pump; never let children pump fuel.**



The tethered fuel cap is located behind a hinged fuel door on the passenger's side of the vehicle.

To open the fuel door, apply pressure in the center of the rear edge of the fuel door and it will pop open.

To remove the fuel cap, turn it slowly counterclockwise. The fuel cap has a spring in it; if the cap is released too soon, it will spring back to the right.

While refueling, hang the tethered fuel cap from the hook on the fuel door.



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**⚠ CAUTION:**

**If you spill fuel and then something ignites it, you could be badly burned. Fuel can spray out on you if you open the fuel cap too quickly. This spray can happen if your tank is nearly full, and is more likely in hot weather. Open the fuel cap slowly and wait for any hiss noise to stop. Then unscrew the cap all the way.**

Be careful not to spill fuel. Do not top off or overfill the tank, and wait a few seconds after you have finished pumping before removing the nozzle. Clean fuel from painted surfaces as soon as possible. See *Washing Your Vehicle on page 447*.

When replacing the fuel cap, turn it clockwise until it clicks. Make sure the cap is fully installed. The diagnostic system can determine if the fuel cap has been left off or improperly installed. This would allow fuel to evaporate into the atmosphere. See *Malfunction Indicator Lamp on page 208*.

The TIGHTEN GAS CAP message will appear on the Driver Information Center (DIC) display if the fuel cap is not reinstalled properly. See *DIC Warnings and Messages on page 220* for more information.

**⚠ CAUTION:**

**If a fire starts while you are refueling, do not remove the nozzle. Shut off the flow of fuel by shutting off the pump or by notifying the station attendant. Leave the area immediately.**

***Notice:*** **If you need a new fuel cap, be sure to get the right type. Your dealer can get one for you. If you get the wrong type, it may not fit properly. This may cause your malfunction indicator lamp to light and may damage your fuel tank and emissions system. See *Malfunction Indicator Lamp on page 208*.**



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## Filling a Portable Fuel Container

**⚠ CAUTION:**

**Never fill a portable fuel container while it is in your vehicle. Static electricity discharge from the container can ignite the gasoline vapor. You can be badly burned and your vehicle damaged if this occurs. To help avoid injury to you and others:**

- **Dispense gasoline only into approved containers.**
- **Do not fill a container while it is inside a vehicle, in a vehicle's trunk, pickup bed, or on any surface other than the ground.**
- **Bring the fill nozzle in contact with the inside of the fill opening before operating the nozzle. Contact should be maintained until the filling is complete.**
- **Do not smoke while pumping gasoline.**
- **Do not use a cellular phone while pumping gasoline.**

# Checking Things Under the Hood

**⚠ CAUTION:**

**An electric fan under the hood can start up and injure you even when the engine is not running. Keep hands, clothing, and tools away from any underhood electric fan.**

**⚠ CAUTION:**

**Things that burn can get on hot engine parts and start a fire. These include liquids like fuel, oil, coolant, brake fluid, windshield washer and other fluids, and plastic or rubber. You or others could be burned. Be careful not to drop or spill things that will burn onto a hot engine.**



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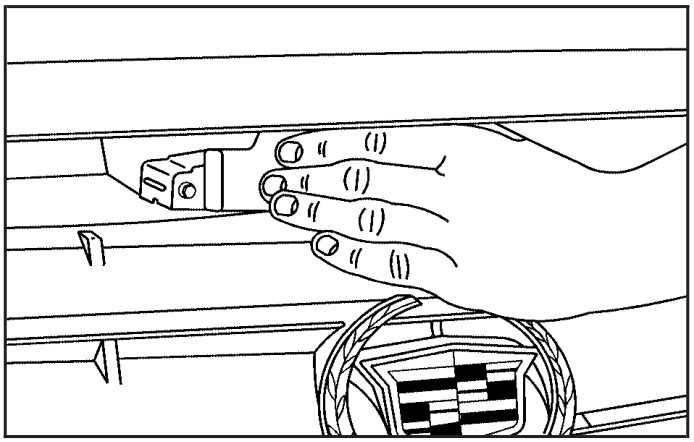
## Hood Release

To open the hood, do the following:

1. Pull the hood release lever with this symbol on it. It is located inside the vehicle on the lower left side of the instrument panel.



2. Then go to the front of the vehicle and find the secondary hood release lever. The lever is located under the front edge of the grille near the center. Move the release lever to the side and raise the hood.

Before closing the hood, be sure all the filler caps are on properly. Then pull the hood down and close it firmly.



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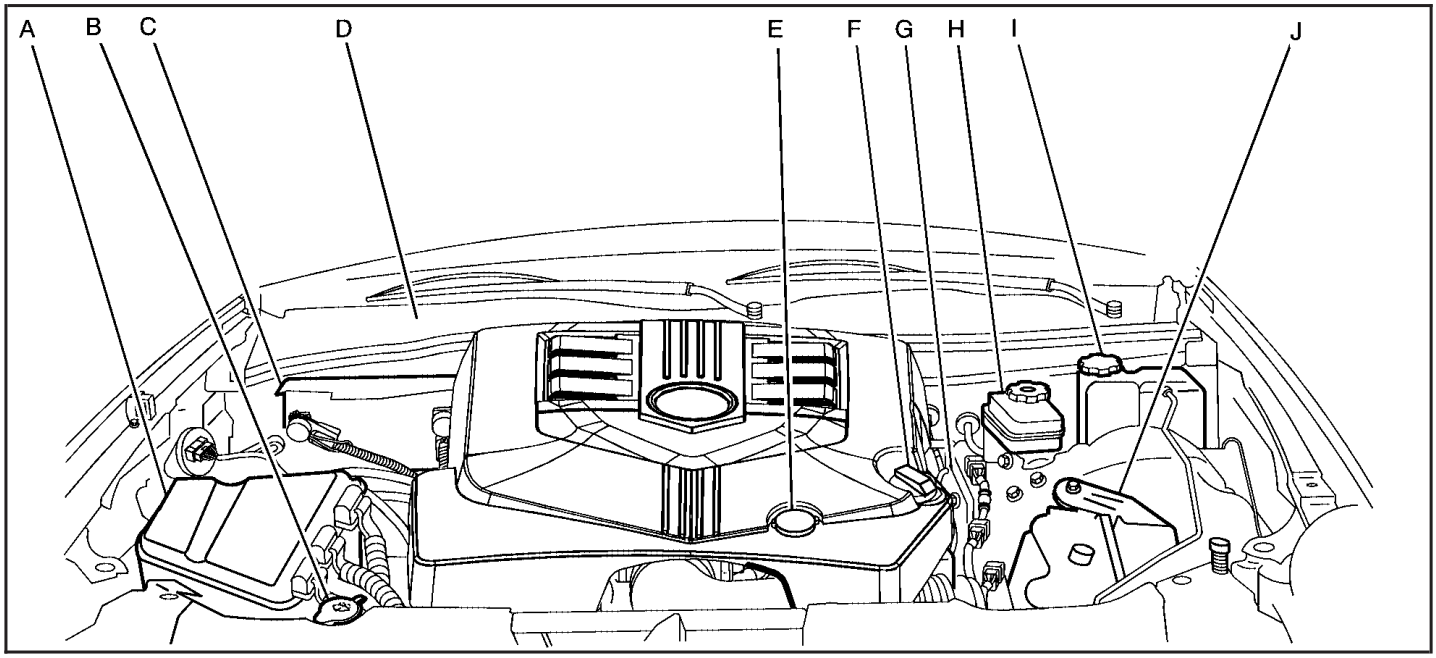
## Engine Compartment Overview

When you open the hood on the 3.6L V6 engine, you will see the following:



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A. Underhood Fuse Block. See *Underhood Fuse Block on page 455*.

B. Windshield Washer Fluid Reservoir. See “Adding Washer Fluid” under *Windshield Washer Fluid on page 380*.

C. Battery. See *Battery on page 385*.

D. Passenger Compartment Air Filter. See *Passenger Compartment Air Filter on page 195*.

E. Power Steering Fluid Reservoir. See *Power Steering Fluid on page 379*.

F. Engine Oil Fill Cap. See “When to Add Engine Oil” under *Engine Oil on page 360*.

G. Engine Oil Dipstick (Out of View). See “Checking Engine Oil” under *Engine Oil on page 360*.

H. Brake Master Cylinder Reservoir. See “Brake Fluid” under *Brakes on page 381*.

I. Engine Coolant Surge Tank and Pressure Cap. See *Coolant Surge Tank Pressure Cap on page 371* and *Cooling System on page 374*.

J. Engine Air Cleaner/Filter. See *Engine Air Cleaner/Filter on page 365*.



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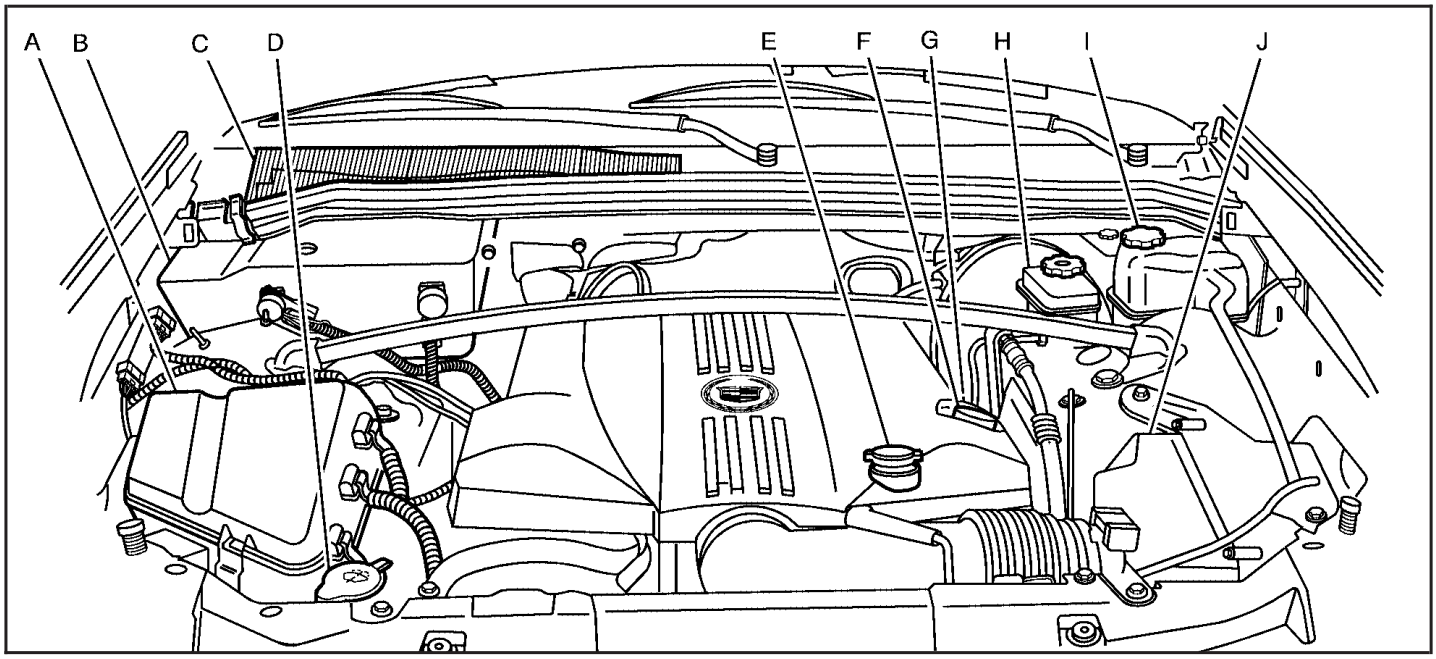
When you open the hood on the 4.6L V8 engine, you will see the following:



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A. Underhood Fuse Block. See *Underhood Fuse Block on page 455*.

B. Battery. See *Battery on page 385*.

C. Passenger Compartment Air Filter. See *Passenger Compartment Air Filter on page 195*.

D. Windshield Washer Fluid Reservoir. See "Adding Washer Fluid" under *Windshield Washer Fluid on page 380*.

E. Power Steering Fluid Reservoir. See *Power Steering Fluid on page 379*.

F. Engine Oil Fill Cap. See "When to Add Engine Oil" under *Engine Oil on page 360*.

G. Engine Oil Dipstick (Out of View). See "Checking Engine Oil" under *Engine Oil on page 360*.

H. Brake Master Cylinder Reservoir. See "Brake Fluid" under *Brakes on page 381*.

I. Engine Coolant Surge Tank and Pressure Cap. See *Coolant Surge Tank Pressure Cap on page 371* and *Cooling System on page 374*.

J. Engine Air Cleaner/Filter. See *Engine Air Cleaner/Filter on page 365*.



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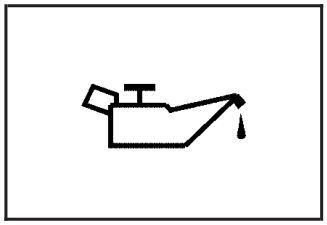
## Engine Oil



Your vehicle may have an oil pressure light on the instrument cluster.

There is also an OIL PRESSURE LOW STOP ENGINE message on the Driver Information Center (DIC). If the light and/or message appears, check the engine oil level right away. For more information, see “OIL PRESSURE LOW STOP ENGINE” under *DIC Warnings and Messages on page 220* and *Oil Pressure Light on page 211*. You should check the engine oil level regularly; this is an added reminder.

## Checking Engine Oil

It is a good idea to check the engine oil every time you get fuel. In order to get an accurate reading, the oil must be warm and the vehicle must be on level ground.

The engine oil dipstick handle is a yellow loop. See *Engine Compartment Overview on page 356* for the location of the engine oil dipstick.

1. Turn off the engine and give the oil several minutes to drain back into the oil pan. If you do not do this, the oil dipstick might not show the actual level.
2. Pull out the dipstick and clean it with a paper towel or cloth, then push it back in all the way. Remove it again, keeping the tip down, and check the level.



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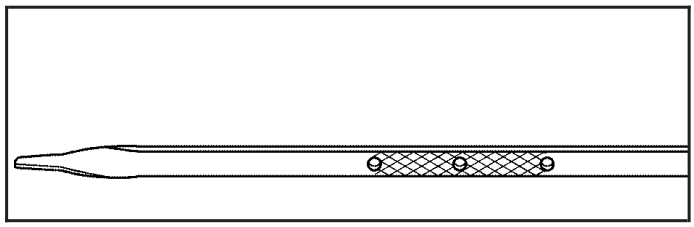
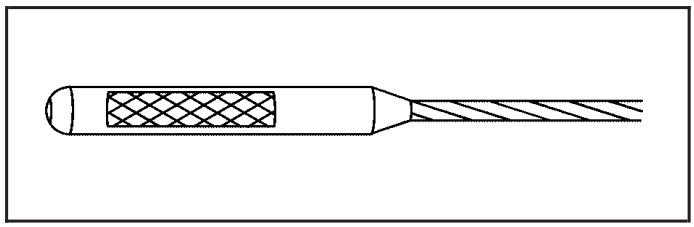
## When to Add Engine Oil



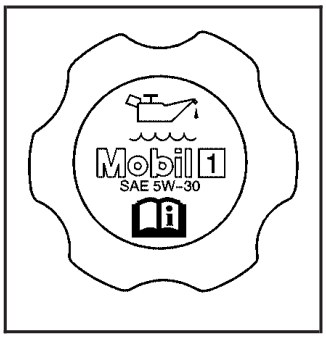
**3.6L V6 Engine**



**4.6L V8 Engine**

If the oil is below the cross-hatched area at the tip of the dipstick, you need to add at least one quart/liter of oil. But you must use the right kind. This section explains what kind of oil to use. For engine oil crankcase capacity, see *Capacities and Specifications on page 464*.

***Notice:*** **Do not add too much oil. If the engine has so much oil that the oil level gets above the cross-hatched area that shows the proper operating range, the engine could be damaged.**




See *Engine Compartment Overview on page 356* for the location of the engine oil fill cap.

Be sure to add enough oil to put the level somewhere in the proper operating range. Push the dipstick all the way back in when you are through.



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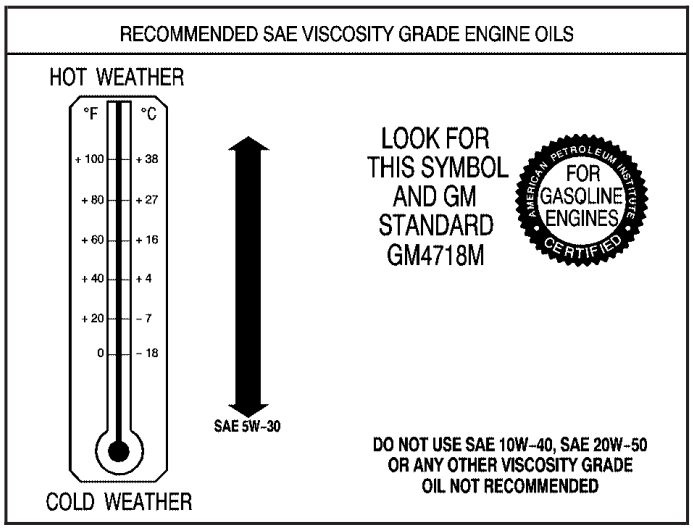
## What Kind of Engine Oil to Use




Look for two things:

- GM4718M

  Your vehicle's engine requires a special oil meeting GM Standard GM4718M. Oils meeting this standard may be identified as synthetic. However, not all synthetic oils will meet this GM standard. Look for and use only an oil that meets GM Standard GM4718M.

***Notice:*** **If you use oils that do not have the GM4718M Standard designation, you can cause engine damage not covered by your warranty.**

- SAE 5W-30

  As shown in the viscosity chart, SAE 5W-30 is best for your vehicle.

  These numbers on an oil container show its viscosity, or thickness. Do not use other viscosity oils such as SAE 20W-50.

Oils meeting these requirements should also have the starburst symbol on the container. This symbol indicates that the oil has been certified by the American Petroleum Institute (API).



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Look for this on the oil container, and use only those oils that are identified as meeting GM Standard GM4718M and have the starburst symbol on the front of the oil container.

Your vehicle's engine is filled at the factory with a Mobil 1® synthetic oil, which meets all requirements for your vehicle.

Substitute Engine Oil: When adding oil to maintain engine oil level, oil meeting GM Standard GM4718M may not be available. You can add substitute oil designated SAE 5W-30 with the starburst symbol at all temperatures. Substitute oil not meeting GM Standard GM4718M should not be used for an oil change.

### Engine Oil Additives

Do not add anything to the oil. The recommended oils with the starburst symbol that meet GM standards are all you need for good performance and engine protection.

## Engine Oil Life System

### When to Change Engine Oil

Your vehicle has a computer system that lets you know when to change the engine oil and filter. This is based on engine revolutions and engine temperature, and not on mileage. Based on driving conditions, the mileage at which an oil change will be indicated can vary considerably. For the oil life system to work properly, you must reset the system every time the oil is changed.

When the system has calculated that oil life has been diminished, it will indicate that an oil change is necessary. A CHANGE ENGINE OIL SOON message in the DIC will come on. Change the oil as soon as possible within the next 600 miles (1 000 km). It is possible that, if you are driving under the best conditions, the oil life system may not indicate that an oil change is necessary for over a year.



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However, the engine oil and filter must be changed at least once a year and at this time the system must be reset. Your dealer has GM-trained service people who will perform this work using genuine GM parts and reset the system. It is also important to check the oil regularly and keep it at the proper level.

If the system is ever reset accidentally, you must change the oil at 3,000 miles (5 000 km) since your last oil change. Remember to reset the oil life system whenever the oil is changed.

After the oil has been changed, the CHANGE ENGINE OIL SOON message and the oil life indicator must be reset.

## How to Reset the Engine Oil Life System

The Engine Oil Life System calculates when to change the engine oil and filter based on vehicle use. Anytime your oil is changed, reset the system so it can calculate when the next oil change is required. If a situation occurs where you change your oil prior to a CHANGE ENGINE OIL SOON message coming on, reset the system.

Always reset the engine oil life to 100% after every oil change. It will not reset itself. To reset the Engine Oil Life System, do the following:

1. Display the OIL LIFE REMAINING on the DIC. See *DIC Warnings and Messages on page 220*.
2. Press and hold the SET/RESET button on the DIC for more than five seconds. The oil life will change to 100%.

If the CHANGE ENGINE OIL SOON message comes back on when you start your vehicle, the Engine Oil Life System has not reset. Repeat the procedure.



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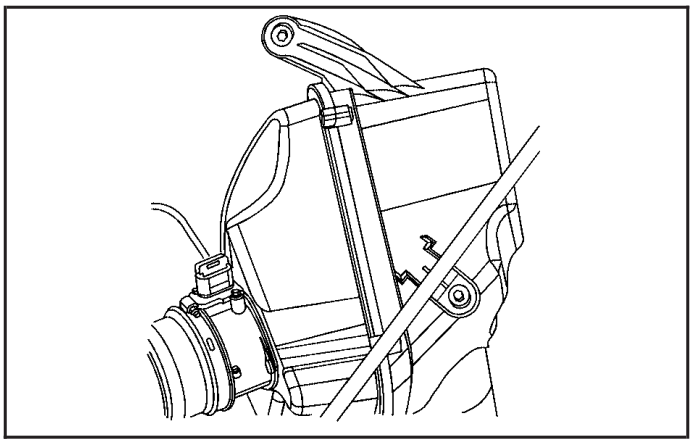
## What to Do with Used Oil

Used engine oil contains certain elements that may be unhealthy for your skin and could even cause cancer. Do not let used oil stay on your skin for very long. Clean your skin and nails with soap and water, or a good hand cleaner. Wash or properly dispose of clothing or rags containing used engine oil. See the manufacturer's warnings about the use and disposal of oil products.

Used oil can be a threat to the environment. If you change your own oil, be sure to drain all the oil from the filter before disposal. Never dispose of oil by putting it in the trash, pouring it on the ground, into sewers, or into streams or bodies of water. Instead, recycle it by taking it to a place that collects used oil. If you have a problem properly disposing of used oil, ask your dealer, a service station, or a local recycling center for help.

## Engine Air Cleaner/Filter



**4.6L V8 shown, 3.6L V6 similar**

The engine air cleaner/filter is in the engine compartment on the driver's side of the vehicle, near the front. See *Engine Compartment Overview on page 356* for more information on location.



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## When to Inspect the Engine Air Cleaner/Filter

Inspect the air cleaner/filter at the Maintenance II intervals and replace it at the first oil change after each 50,000 mile (83 000 km) interval. See *Scheduled Maintenance on page 471* for more information. If you are driving in dusty/dirty conditions, inspect the filter at each engine oil change.

## How to Inspect the Engine Air Cleaner/Filter

To inspect the air cleaner/filter remove the filter from the vehicle and lightly shake the filter to release loose dust and dirt. If the filter remains caked with dirt, a new filter is required.

To inspect or replace the filter, do the following:

1. Remove the two screws located on the top of the cover.
2. Disconnect the coolant recovery hose so that it is not going across the top of the engine air cleaner/filter.
3. The two sides of the airbox are hinged at the bottom. Open the airbox by pushing the top of the airbox cover toward the engine.
4. Remove the air filter by lifting it straight up through the opening in the airbox.
5. Inspect or replace the engine air cleaner/filter. See *Normal Maintenance Replacement Parts on page 482* for the correct part number for the filter.
6. Reinstall the cover by reversing Steps 1 through 4.

**⚠ CAUTION:**

**Operating the engine with the air cleaner/filter off can cause you or others to be burned. The air cleaner not only cleans the air; it helps to stop flames if the engine backfires. If it is not there and the engine backfires, you could be burned. Do not drive with it off, and be careful working on the engine with the air cleaner/filter off.**

***Notice:*** **If the air cleaner/filter is off, a backfire can cause a damaging engine fire. And, dirt can easily get into your engine, which will damage it. Always have the air cleaner/filter in place when you are driving.**



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## Automatic Transmission Fluid

### How to Check Automatic Transmission Fluid

It is not necessary to check the transmission fluid level. A transmission fluid leak is the only reason for fluid loss. If a leak occurs, take the vehicle to the dealership service department and have it repaired as soon as possible.

There is a special procedure for checking and changing the transmission fluid. Because this procedure is difficult, you should have this done at the dealership service department. Contact your dealer for additional information or the procedure can be found in the service manual. To purchase a service manual, see *Service Publications Ordering Information on page 505*.

***Notice:*** **Use of the incorrect automatic transmission fluid may damage your vehicle, and the damages may not be covered by your warranty. Always use the automatic transmission fluid listed in *Recommended Fluids and Lubricants on page 480*.**

Change the fluid and filter at the intervals listed in *Additional Required Services on page 473*, and be sure to use the fluid listed in *Recommended Fluids and Lubricants on page 480*.



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## Engine Coolant

The cooling system in your vehicle is filled with DEX-COOL® engine coolant. This coolant is designed to remain in your vehicle for five years or 150,000 miles (240 000 km), whichever occurs first, if you add only DEX-COOL® extended life coolant.

The following explains your cooling system and how to add coolant when it is low. If you have a problem with engine overheating, see *Engine Overheating on page 372*.

A 50/50 mixture of clean, drinkable water and DEX-COOL® coolant will:

- Give freezing protection down to –34°F (–37°C).
- Give boiling protection up to 265°F (129°C).
- Protect against rust and corrosion.
- Help keep the proper engine temperature.
- Allow the warning lights and gages to work as they should.

***Notice:*** **Using coolant other than DEX-COOL® may cause premature engine, heater core, or radiator corrosion. In addition, the engine coolant may require changing sooner, at the first maintenance service after each 30,000 miles (50 000 km) or 24 months, whichever occurs first. Any repairs would not be covered by your warranty. Always use DEX-COOL® (silicate-free) coolant in your vehicle.**



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## What to Use

Use a mixture of one-half clean, drinkable water and one-half DEX-COOL® coolant which will not damage aluminum parts. If you use this coolant mixture, you do not need to add anything else.

### ⚠ CAUTION:

**Adding only plain water to your cooling system can be dangerous. Plain water, or some other liquid such as alcohol, can boil before the proper coolant mixture will. Your vehicle's coolant warning system is set for the proper coolant mixture. With plain water or the wrong mixture, your engine could get too hot but you would not get the overheat warning. Your engine could catch fire and you or others could be burned. Use a 50/50 mixture of clean, drinkable water and DEX-COOL® coolant.**

***Notice:*** **If you use an improper coolant mixture, your engine could overheat and be badly damaged. The repair cost would not be covered by your warranty. Too much water in the mixture can freeze and crack the engine, radiator, heater core, and other parts.**

If you have to add coolant more than once or twice a year, have your dealer check your cooling system.

***Notice:*** **If you use extra inhibitors and/or additives in your vehicle's cooling system, you could damage your vehicle. Use only the proper mixture of the engine coolant listed in this manual for the cooling system. See *Recommended Fluids and Lubricants on page 480* for more information.**



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## Checking Coolant

The coolant surge tank and pressure cap are located on the driver's side of the vehicle, toward the rear of the engine compartment. See *Engine Compartment Overview on page 356* for more information on location.

**⚠ CAUTION:**

**Turning the surge tank pressure cap when the engine and radiator are hot can allow steam and scalding liquids to blow out and burn you badly. Never turn the surge tank pressure cap — even a little — when the engine and radiator are hot.**

The vehicle must be on a level surface. When your engine is cold, the coolant level should be at the FULL COLD/FROID line on the side of the surge tank. Follow the arrow from the top of the tank down the side to the horizontal mark.



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### Adding Coolant

If you need more coolant, add the proper DEX-COOL® coolant mixture at the surge tank, but only when the engine is cool.

**⚠ CAUTION:**

**You can be burned if you spill coolant on hot engine parts. Coolant contains ethylene glycol, and it will burn if the engine parts are hot enough. Do not spill coolant on a hot engine.**

When replacing the pressure cap, make sure it is hand-tight and fully seated.

## Coolant Surge Tank Pressure Cap

***Notice:*** **If the pressure cap is not tightly installed, coolant loss and possible engine damage may occur. Be sure the cap is properly and tightly secured.**

The coolant surge tank pressure cap must be fully installed on the coolant surge tank. See *Engine Compartment Overview on page 356* for more information on location.



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## Engine Overheating

There are two engine hot messages that could be displayed in the Driver Information Center (DIC). See *DIC Warnings and Messages on page 220* for more information.

If the engine is overheating, then you will find a coolant temperature gage and a coolant warning light on the instrument panel. See *Engine Coolant Temperature Gage on page 207* and *Engine Coolant Temperature Warning Light on page 206* for more information.

### If Steam Is Coming From Your Engine

**⚠ CAUTION:**

**Steam from an overheated engine can burn you badly, even if you just open the hood. Stay away from the engine if you see or hear steam coming from it. Turn it off and get everyone away from the**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

**vehicle until it cools down. Wait until there is no sign of steam or coolant before you open the hood.**

**If you keep driving when the vehicles engine is overheated, the liquids in it can catch fire. You or others could be badly burned. Stop your engine if it overheats, and get out of the vehicle until the engine is cool.**

**See *Overheated Engine Protection Operating Mode on page 374* for information on driving to a safe place in an emergency.**

***Notice:*** **If your engine catches fire because you keep driving with no coolant, your vehicle can be badly damaged. The costly repairs would not be covered by your warranty. See *Overheated Engine Protection Operating Mode on page 374* for information on driving to a safe place in an emergency.**



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## If No Steam Is Coming From Your Engine

An overheat warning, can indicate a serious problem.

If you get an engine overheat warning but see or hear no steam, the problem might not be too serious. Sometimes the engine can get a little too hot when you:

- Climb a long hill on a hot day.
- Stop after high-speed driving.
- Idle for long periods in traffic.
- Tow a trailer.

If you get the overheat warning with no sign of steam, try this for a minute or so:

1. In heavy traffic, let the engine idle in NEUTRAL (N) while stopped. If it is safe to do so, pull off the road, shift to PARK (P) or NEUTRAL (N) and let the engine idle.
2. Set the climate controls to the highest heat setting and fan speed and open the windows, as necessary.

If the coolant warning light is not on or the coolant temperature gage does not indicate the engine is overheating, you can drive. Just to be safe, drive slower for about 10 minutes. If the warnings do not come back on, drive normally.

If the warnings continue and you have not stopped, pull over, stop, and park the vehicle right away.

If there is still no sign of steam, idle the engine for three minutes while parked. If the warnings are still indicated, turn off the engine and get everyone out of the vehicle until it cools down. Also, see “Overheated Engine Protection Operating Mode” later in this section.

You might decide not to lift the hood but to get service help right away.



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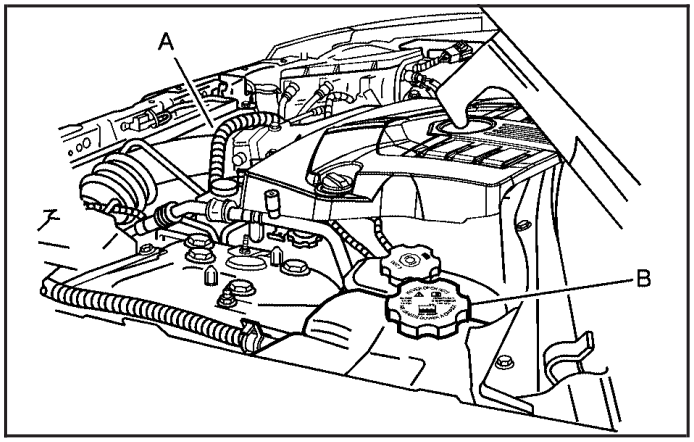
## Overheated Engine Protection Operating Mode

This operating mode allows your vehicle to be driven to a safe place in an emergency. Should an hot engine condition exist, an overheat protection mode which alternates firing groups of cylinders helps prevent engine damage. In this mode, there is a loss in power and engine performance. Driving extended miles (km) and/or towing a trailer in the overheat protection mode should be avoided.

***Notice:*** **After driving in the overheated engine protection operating mode, to avoid engine damage, allow the engine to cool before attempting any repair. The engine oil will be severely degraded. Repair the cause of coolant loss and change the oil. See *Engine Oil on page 360*.**

## Cooling System

When you decide it is safe to lift the hood, here is what you will see:




**3.6L V6 shown, 4.6L V8 similar**

A. Electric Engine Cooling Fans

B. Coolant Surge Tank and Pressure Cap

Some vehicles may be equipped with an engine driven fan, as well as the electric pusher fans (A) which are located behind the vehicle's grille.



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**⚠ CAUTION:**

**An electric engine cooling fan under the hood can start up even when the engine is not running and can injure you. Keep hands, clothing, and tools away from any underhood electric fan.**

If the coolant inside the coolant surge tank is boiling, do not do anything else until it cools down. The vehicle should be parked on a level surface.

When the engine is cold, the coolant level should be at or slightly above the FULL COLD/FROID line on the side of the coolant surge tank. If it is not, you may have a leak at the pressure cap or in the radiator hoses, heater hoses, radiator, water pump or somewhere else in the cooling system.

**⚠ CAUTION:**

**Heater and radiator hoses, and other engine parts, can be very hot. Do not touch them. If you do, you can be burned.**

**Do not run the engine if there is a leak. If you run the engine, it could lose all coolant. That could cause an engine fire, and you could be burned. Get any leak fixed before you drive the vehicle.**

If there seems to be no leak, with the engine on, check to see if the electric engine cooling fans are running. If the engine is overheating, both fans should be running. If they are not, your vehicle needs service.

***Notice:*** **Engine damage from running your engine without coolant is not covered by your warranty. See *Overheated Engine Protection Operating Mode on page 374* for information on driving to a safe place in an emergency.**



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***Notice:*** **Using coolant other than DEX-COOL® may cause premature engine, heater core, or radiator corrosion. In addition, the engine coolant could require changing sooner, at 30,000 miles (50 000 km) or 24 months, whichever occurs first. Any repairs would not be covered by your warranty. Always use DEX-COOL® (silicate-free) coolant in your vehicle.**

## How to Add Coolant to the Coolant Surge Tank

If you have not found a problem yet, check to see if coolant is visible in the surge tank. If coolant is visible but the coolant level is not at the FULL COLD/FROID line on the side of the coolant surge tank, add a 50/50 mixture of *clean, drinkable water* and DEX-COOL® coolant at the coolant surge tank, but be sure the cooling system, including the coolant surge tank pressure cap, is cool before you do it. See *Engine Coolant on page 368* for more information.

**⚠ CAUTION:**

**Steam and scalding liquids from a hot cooling system can blow out and burn you badly. They are under pressure, and if you turn the coolant surge tank pressure cap — even a little — they can come out at high speed. Never turn the cap when the cooling system, including the coolant surge tank pressure cap, is hot. Wait for the cooling system and coolant surge tank pressure cap to cool if you ever have to turn the pressure cap.**



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**⚠ CAUTION:**

**Adding only plain water to your cooling system can be dangerous. Plain water, or some other liquid such as alcohol, can boil before the proper coolant mixture will. Your vehicle's coolant warning system is set for the proper coolant mixture. With plain water or the wrong mixture, your engine could get too hot but you would not get the overheat warning. Your engine could catch fire and you or others could be burned. Use a 50/50 mixture of clean, drinkable water and DEX-COOL® coolant.**

***Notice:*** **In cold weather, water can freeze and crack the engine, radiator, heater core and other parts. Use the recommended coolant and the proper coolant mixture.**

**⚠ CAUTION:**

**You can be burned if you spill coolant on hot engine parts. Coolant contains ethylene glycol and it will burn if the engine parts are hot enough. Do not spill coolant on a hot engine.**

If no coolant is visible in the surge tank, add coolant as follows:

1. You can remove the coolant surge tank pressure cap when the cooling system, including the coolant surge tank pressure cap and upper radiator hose, is no longer hot. Turn the pressure cap slowly counterclockwise (left) about one-quarter turn and then stop.

   If you hear a hiss, wait for that to stop. A hiss means there is still some pressure left.



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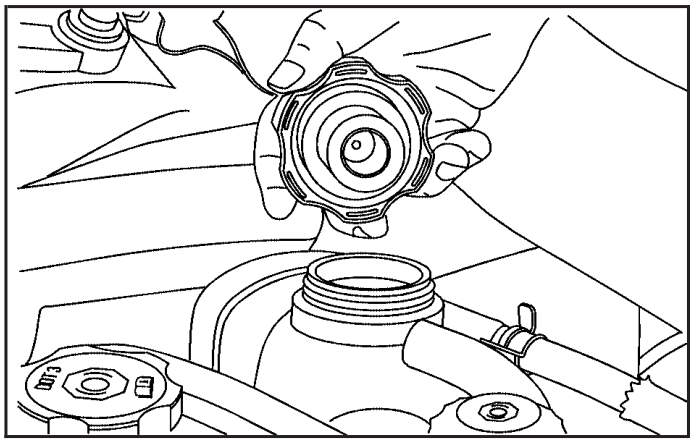
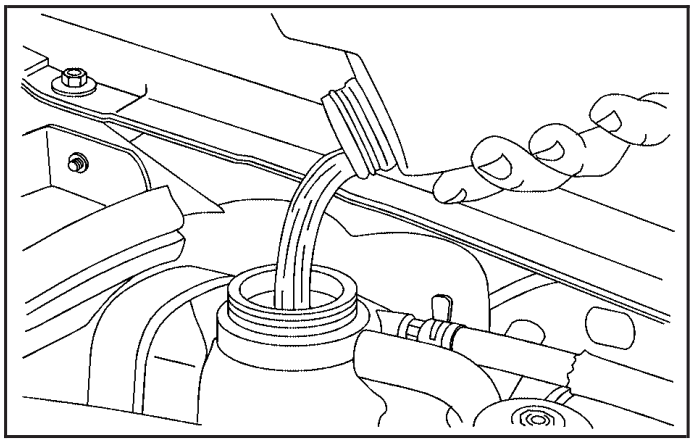


2. Then keep turning the pressure cap slowly, and remove it.



3. Fill the coolant surge tank with the proper mixture, to slightly above the FULL COLD/FROID line on the side of the coolant surge tank.



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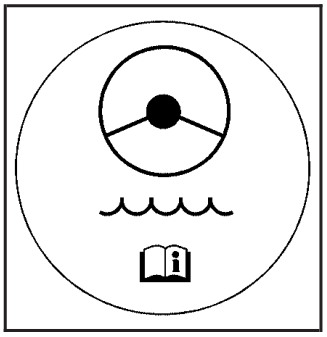
4. With the coolant surge tank pressure cap off, start the engine and let it run until you can feel the upper radiator hose getting hot. The upper radiator hose is the largest of the hoses which comes out of the radiator, on the passenger's side of the vehicle. Watch out for the engine cooling fans.

   By this time, the coolant level inside the coolant surge tank may be lower. If the level is lower, add more of the proper mixture to the coolant surge tank until the level reaches the FULL COLD/FROID line on the side of the coolant surge tank.

5. Then replace the pressure cap. Be sure the pressure cap is hand-tight and fully seated.

Recheck the coolant level in the bottle next time you use your vehicle to insure the system is full when cold. See *Engine Coolant on page 368*.

## Power Steering Fluid



See *Engine Compartment Overview on page 356* for reservoir location.

### When to Check Power Steering Fluid

It is not necessary to regularly check power steering fluid unless you suspect there is a leak in the system or you hear an unusual noise. A fluid loss in this system could indicate a problem. Have the system inspected and repaired.



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### How to Check Power Steering Fluid

To check the power steering fluid, do the following:

1. Turn the key off and let the engine compartment cool down.
2. Wipe the cap and the top of the reservoir clean.
3. Unscrew the cap and wipe the dipstick with a clean rag.
4. Replace the cap and completely tighten it.
5. Remove the cap again and look at the fluid level on the dipstick.

The level should be within the HOT mark. If necessary, add only enough fluid to bring the level within the mark.

### What to Use

To determine what kind of fluid to use, see *Recommended Fluids and Lubricants on page 480*. Always use the proper fluid. Failure to use the proper fluid can cause leaks and damage hoses and seals.

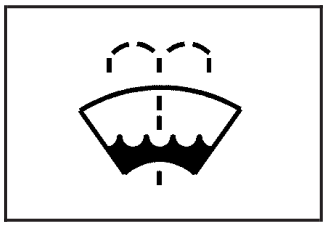
## Windshield Washer Fluid

### What to Use

When you need windshield washer fluid, be sure to read the manufacturer's instructions before use. If you will be operating your vehicle in an area where the temperature may fall below freezing, use a fluid that has sufficient protection against freezing.

### Adding Washer Fluid

The WASHER FLUID LOW ADD FLUID message will appear on the Driver Information Center (DIC) when the fluid level is low. See *DIC Warnings and Messages on page 220* for more information.



Open the cap with the washer symbol on it. Add washer fluid until the tank is full. See *Engine Compartment Overview on page 356* for reservoir location.



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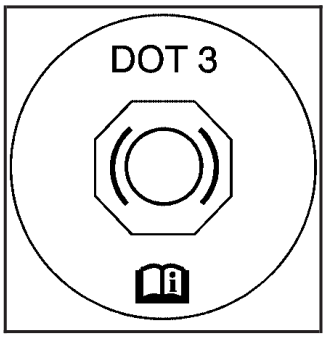
***Notice:***

- **When using concentrated washer fluid, follow the manufacturer's instructions for adding water.**
- **Do not mix water with ready-to-use washer fluid. Water can cause the solution to freeze and damage your washer fluid tank and other parts of the washer system. Also, water does not clean as well as washer fluid.**
- **Fill your washer fluid tank only three-quarters full when it is very cold. This allows for expansion if freezing occurs, which could damage the tank if it is completely full.**
- **Do not use engine coolant (antifreeze) in your windshield washer. It can damage your washer system and paint.**

# Brakes

## Brake Fluid




Your brake master cylinder reservoir is filled with DOT-3 brake fluid. See *Engine Compartment Overview on page 356* for the location of the reservoir.

There are only two reasons why the brake fluid level in the reservoir might go down. The first is that the brake fluid goes down to an acceptable level during normal brake lining wear. When new linings are put in, the fluid level goes back up. The other reason is that fluid is leaking out of the brake system. If it is, you should have your brake system fixed, since a leak means that sooner or later your brakes will not work well, or will not work at all.



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So, it is not a good idea to top off your brake fluid. Adding brake fluid will not correct a leak. If you add fluid when your linings are worn, then you will have too much fluid when you get new brake linings. You should add or remove brake fluid, as necessary, only when work is done on the brake hydraulic system.

**⚠ CAUTION:**

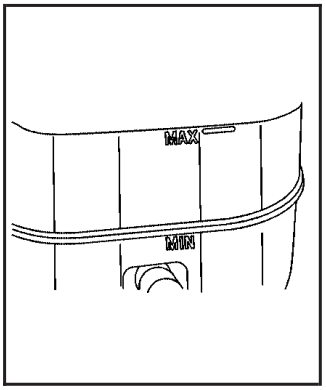
**If you have too much brake fluid, it can spill on the engine. The fluid will burn if the engine is hot enough. You or others could be burned, and your vehicle could be damaged. Add brake fluid only when work is done on the brake hydraulic system. See "Checking Brake Fluid" in this section.**

When the brake fluid falls to a low level, the brake warning light will come on. See *Brake System Warning Light on page 204*.

Refer to the Maintenance Schedule to determine when to check your brake fluid. See *Scheduled Maintenance on page 471*.

## Checking Brake Fluid

You can check the brake fluid without taking off the cap.




Look at the brake fluid reservoir. The fluid level should be above MIN. If it is not, have your brake system checked to see if there is a leak.

After work is done on the brake hydraulic system, make sure the level is above the MIN but not over the MAX mark.



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## What to Add

When you do need brake fluid, DOT-3 brake fluid is recommended for use. DOT-4 brake fluid is also compatible with your vehicle's brake system parts. However, if you choose to use DOT-4 fluid, it is recommended that you flush your brake hydraulic system and refill it with new DOT-4 fluid at a regular maintenance service every two years. See *Additional Required Services on page 473*. Use new brake fluid from a sealed container only. See *Recommended Fluids and Lubricants on page 480*.

Always clean the brake fluid reservoir cap and the area around the cap before removing it. This will help keep dirt from entering the reservoir.

**⚠ CAUTION:**

**With the wrong kind of fluid in the brake system, the brakes may not work well, or they may not even work at all. This could cause a crash. Always use the proper brake fluid.**

***Notice:***

- **Using the wrong fluid can badly damage brake system parts. For example, just a few drops of mineral-based oil, such as engine oil, in the brake system can damage brake system parts so badly that they will have to be replaced. Do not let someone put in the wrong kind of fluid.**
- **If you spill brake fluid on your vehicle's painted surfaces, the paint finish can be damaged. Be careful not to spill brake fluid on your vehicle. If you do, wash it off immediately. See *Washing Your Vehicle on page 447*.**



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## Brake Wear

Your vehicle has four-wheel disc brakes.

Disc brake pads have built-in wear indicators that make a high-pitched warning sound when the brake pads are worn and new pads are needed. The sound may come and go or be heard all the time your vehicle is moving, except when you are pushing on the brake pedal firmly.

### ⚠ CAUTION:

**The brake wear warning sound means that soon the brakes will not work well. That could lead to an accident. When you hear the brake wear warning sound, have your vehicle serviced.**

***Notice:*** **Continuing to drive with worn-out brake pads could result in costly brake repair.**

Some driving conditions or climates may cause a brake squeal when the brakes are first applied or lightly applied. This does not mean something is wrong with your brakes.

Properly torqued wheel nuts are necessary to help prevent brake pulsation. When tires are rotated, inspect brake pads for wear and evenly tighten wheel nuts in the proper sequence to GM torque specifications.

Brake linings should always be replaced as complete axle sets.

## Brake Pedal Travel

See your dealer if the brake pedal does not return to normal height, or if there is a rapid increase in pedal travel. This could be a sign of brake trouble.

## Brake Adjustment

Every time you make a brake stop, your disc brakes adjust for wear.



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## Replacing Brake System Parts

The braking system on a vehicle is complex. Its many parts have to be of top quality and work well together if the vehicle is to have really good braking. Your vehicle was designed and tested with top-quality GM brake parts. When you replace parts of your braking system — for example, when your brake linings wear down and you need new ones put in — be sure you get new approved GM replacement parts. If you do not, your brakes may no longer work properly. For example, if someone puts in brake linings that are wrong for your vehicle, the balance between your front and rear brakes can change — for the worse. The braking performance you have come to expect can change in many other ways if someone puts in the wrong replacement brake parts.

## Battery

Your vehicle has a maintenance free battery. When it is time for a new battery, get one that has the replacement number shown on the original battery's label. We recommend an ACDelco® replacement battery. See *Engine Compartment Overview on page 356* for battery location.

***Warning:*** Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.



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## Vehicle Storage

If you are not going to drive your vehicle for 25 days or more, remove the black, negative (–) cable from the battery. This will help keep the battery from running down.

**⚠ CAUTION:**

**Batteries have acid that can burn you and gas that can explode. You can be badly hurt if you are not careful. See *Jump Starting on page 386* for tips on working around a battery without getting hurt.**

## Jump Starting

If your vehicle's battery has run down, you may want to use another vehicle and some jumper cables to start your vehicle. Be sure to use the following steps to do it safely.

**⚠ CAUTION:**

**Batteries can hurt you. They can be dangerous because:**

- **They contain acid that can burn you.**
- **They contain gas that can explode or ignite.**
- **They contain enough electricity to burn you.**

**If you do not follow these steps exactly, some or all of these things can hurt you.**



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***Notice:*** **Ignoring these steps could result in costly damage to your vehicle that would not be covered by your warranty.**

**Trying to start your vehicle by pushing or pulling it will not work, and it could damage your vehicle.**

1. Check the other vehicle. It must have a 12-volt battery with a negative ground system.

***Notice:*** **If the other vehicle's system is not a 12-volt system with a negative ground, both vehicles can be damaged. Only use vehicles with 12-volt systems with negative grounds to jump start your vehicle.**

2. Get the vehicles close enough so the jumper cables can reach, but be sure the vehicles are not touching each other. If they are, it could cause a ground connection you do not want. You would not be able to start your vehicle and the bad grounding could damage the electrical systems.

   To avoid the possibility of the vehicles rolling, set the parking brake firmly on both vehicles involved in the jump start procedure. Put an automatic transmission in PARK (P) or a manual transmission in NEUTRAL before setting the parking brake.

***Notice:*** **If you leave your radio or other accessories on during the jump starting procedure, they could be damaged. The repairs would not be covered by your warranty. Always turn off your radio and other accessories when jump starting your vehicle.**

3. Turn off the ignition on both vehicles. Unplug unnecessary accessories plugged into the cigarette lighter or the accessory power outlets. Turn off the radio and all lamps that are not needed. This will avoid sparks and help save both batteries. And it could save the radio.



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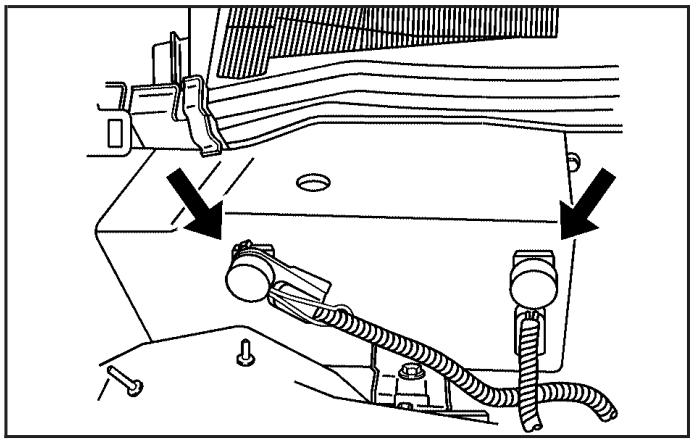
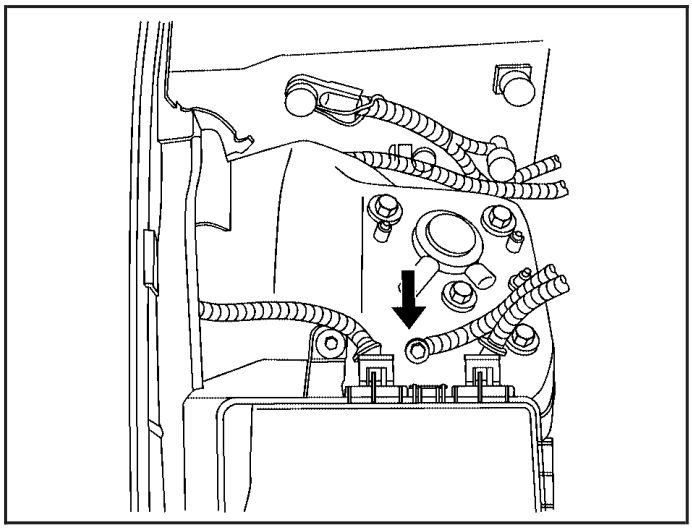


4. Open the hoods and locate the positive (+) and negative (–) terminal locations of the other vehicle, as well as the positive (+) terminal location on your vehicle's battery. See *Engine Compartment Overview on page 356* for more information on the location of the battery.



Your vehicle has a remote negative (–) ground location, as shown in the illustration. It is located between the battery and the underhood fuse block. You should always use this remote ground location, instead of the terminal on the battery.



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***Notice:*** **If you connect a negative cable to the ECM, ECM mounting bracket, or any cables that attach to the ECM bracket, you may damage the ECM. Always attach the negative cable to your vehicle's remote negative ground location, instead of the ECM, ECM bracket, or any cables attached to the ECM bracket.**

**⚠ CAUTION:**

**An electric fan can start up even when the engine is not running and can injure you. Keep hands, clothing and tools away from any underhood electric fan.**

**⚠ CAUTION:**

**Using a match near a battery can cause battery gas to explode. People have been hurt doing this, and some have been blinded. Use a flashlight if you need more light.**

**Be sure the battery has enough water. You do not need to add water to the battery installed in your new vehicle. But if a battery has filler caps, be sure the right amount of fluid is there. If it is low, add water to take care of that first. If you do not, explosive gas could be present.**

**Battery fluid contains acid that can burn you. Do not get it on you. If you accidentally get it in your eyes or on your skin, flush the place with water and get medical help immediately.**



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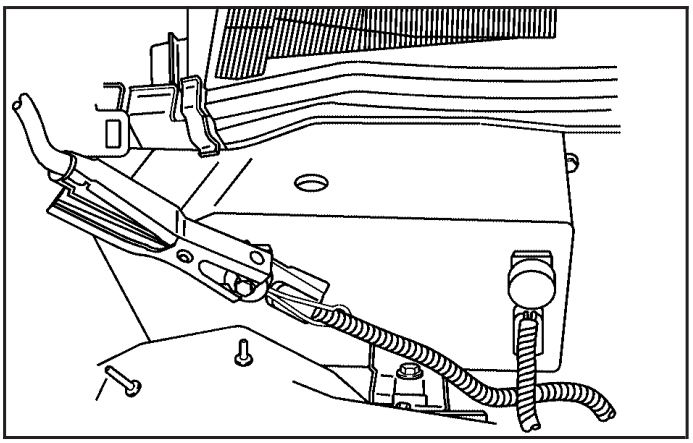
## ⚠ CAUTION:

**Fans or other moving engine parts can injure you badly. Keep your hands away from moving parts once the engine is running.**

5. Check that the jumper cables do not have loose or missing insulation. If they do, you could get a shock. The vehicles could be damaged too.

   Before you connect the cables, here are some basic things you should know. Positive (+) will go to positive (+) or to a remote positive (+) terminal if the vehicle has one. Negative (–) will go to a heavy, unpainted metal engine part or to a remote negative (–) terminal if the vehicle has one.

   Do not connect positive (+) to negative (–) or you will get a short that would damage the battery and maybe other parts too. And do not connect the negative (–) cable to the negative (–) terminal on the dead battery because this can cause sparks.



6. Connect the red positive (+) cable to the positive (+) terminal of the dead battery. Use a remote positive (+) terminal if the vehicle has one.



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7. Do not let the other end touch metal. Connect it to the positive (+) terminal of the good battery. Use a remote positive (+) terminal if the vehicle has one.
8. Now connect the black negative (–) cable to the negative terminal of the good battery. Use a remote negative (–) terminal if the vehicle has one.

   Do not let the other end touch anything until the next step. The other end of the negative (–) cable does not go to the dead battery. It goes to a heavy, unpainted metal engine part or to a remote negative (–) terminal on the vehicle with the dead battery.
9. Connect the other end of the negative (–) cable at least 18 inches (45 cm) away from the dead battery, but not near engine parts that move. The electrical connection is just as good there, and the chance of sparks getting back to the battery is much less.

   Use a remote negative (–) terminal if the vehicle has one. Your vehicle's remote negative (–) ground location is for this purpose.
10. Now start the vehicle with the good battery and run the engine for a while.
11. Try to start the vehicle that had the dead battery. If it will not start after a few tries, it probably needs service.



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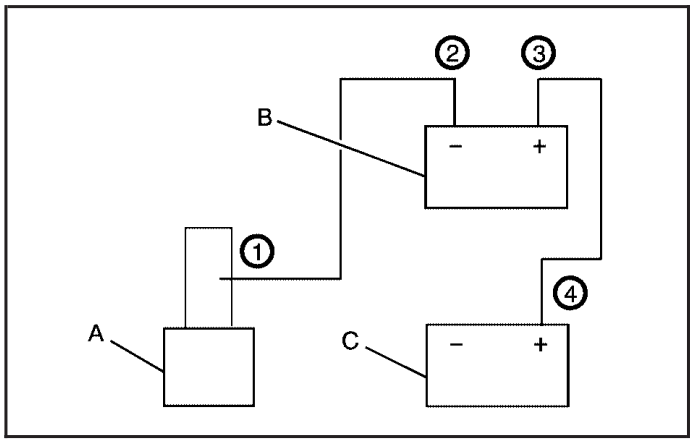
***Notice:*** **If the jumper cables are connected or removed in the wrong order, electrical shorting may occur and damage the vehicle. The repairs would not be covered by your warranty. Always connect and remove the jumper cables in the correct order, making sure that the cables do not touch each other or other metal.**




**Jumper Cable Removal**

A. Heavy, Unpainted Metal Engine Part or Remote Negative (–) Terminal
B. Good Battery or Remote Positive (+) and Remote Negative (–) Terminals
C. Dead Battery or Remote Positive (+) Terminal

To disconnect the jumper cables from both vehicles, do the following:

1. Disconnect the black negative (–) cable from the vehicle that had the dead battery.
2. Disconnect the black negative (–) cable from the vehicle with the good battery.
3. Disconnect the red positive (+) cable from the vehicle with the good battery.
4. Disconnect the red positive (+) cable from the other vehicle.

# All-Wheel Drive

All of the lubricant checks in this section apply to your vehicle. If you have an all-wheel-drive vehicle, there is an additional system that need lubrication.

## Transfer Case

### When to Check Lubricant

It is not necessary to regularly check the transfer case fluid unless you suspect there is a leak or you hear an unusual noise. A fluid loss could indicate a problem. Have it inspected and repaired.



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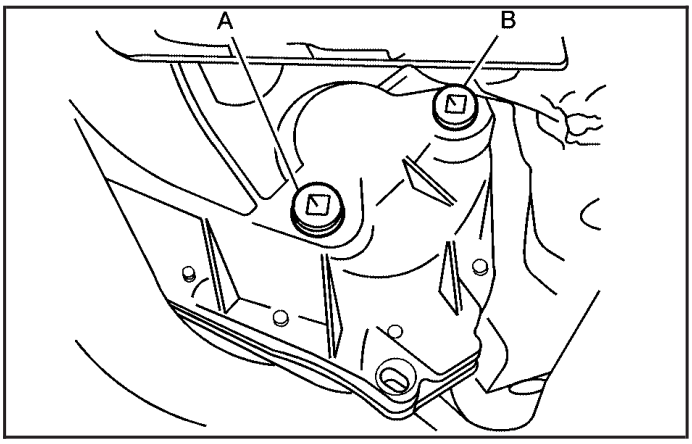
### How to Check Lubricant




A. Drain Plug

B. Fill Plug

To get an accurate reading, the vehicle should be on a level surface.

If the level is below the bottom of the filler plug hole, located on the transfer case, you'll need to add some lubricant. Add enough lubricant to raise the level to the bottom of the filler plug hole. Use care not to overtighten the plug.

### What to Use

Refer to the Maintenance Schedule to determine what kind of lubricant to use. See *Recommended Fluids and Lubricants on page 480*.



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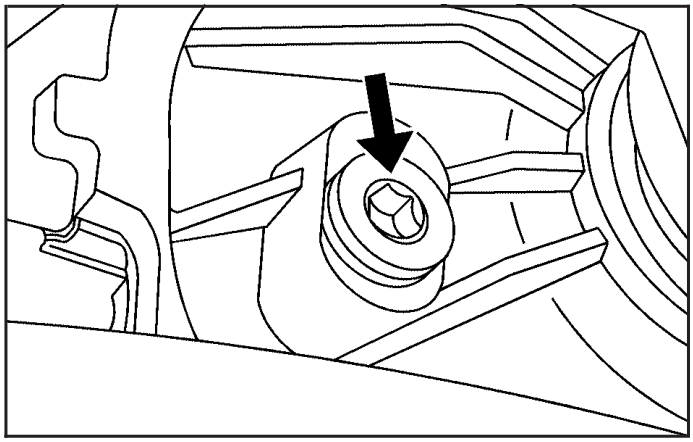
# Rear Axle

## When to Check Lubricant

It is not necessary to regularly check rear axle fluid unless you suspect there is a leak or you hear an unusual noise. A fluid loss could indicate a problem. Have it inspected and repaired.

## How to Check Lubricant



To get an accurate reading, the vehicle should be on a level surface.

If the level is below the bottom of the filler plug hole, located on the rear axle, you'll need to add some lubricant. Add enough lubricant to raise the level to the bottom of the filler plug hole.

## What to Use

Refer to the Maintenance Schedule to determine what kind of lubricant to use. See *Recommended Fluids and Lubricants on page 480*.



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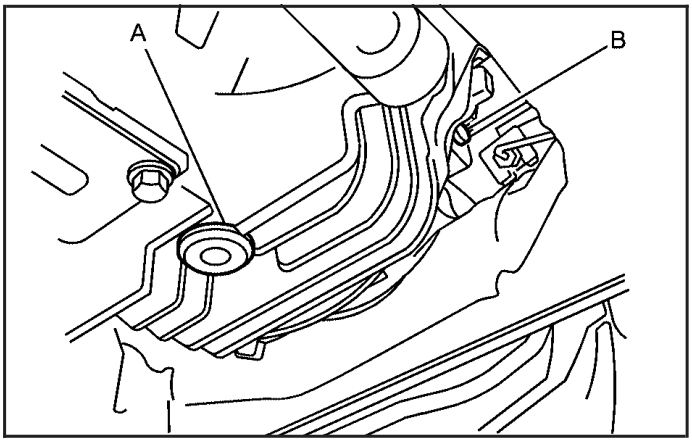
# Front Axle

## When to Check and Change Lubricant

It is not necessary to regularly check the front axle fluid unless you suspect there is a leak or you hear an unusual noise. A fluid loss could indicate a problem. Have it inspected and repaired.

## How to Check Lubricant




A. Drain Plug
B. Filler Plug

To get an accurate reading, the vehicle should be on a level surface.

If the level is below the bottom of the filler plug hole, located on the front axle, you may need to add some lubricant.

## What to Use

Refer to the Maintenance Schedule to determine what kind of lubricant to use. See *Recommended Fluids and Lubricants on page 480*.



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## Bulb Replacement

It is recommended that all bulbs be replaced by your dealer.

### High Intensity Discharge (HID) Lighting

**⚠ CAUTION:**

**The low beam high intensity discharge lighting system operates at a very high voltage. If you try to service any of the system components, you could be seriously injured. Have your dealer or a qualified technician service them.**

Your vehicle has HID headlamps. After your vehicle's HID headlamp bulb has been replaced, you may notice that the beam is a slightly different shade than it was originally. This is normal.

### Halogen Bulbs

**⚠ CAUTION:**

**Halogen bulbs have pressurized gas inside and can burst if you drop or scratch the bulb. You or others could be injured. Be sure to read and follow the instructions on the bulb package.**



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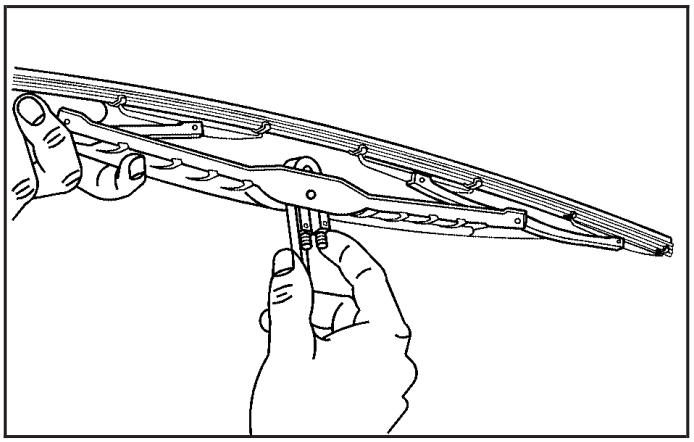
## Windshield Wiper Blade Replacement

Windshield wiper blades should be inspected for wear or cracking. See *Scheduled Maintenance on page 471* for more information.

It's a good idea to clean or replace the wiper blade assembly on a regular basis or when worn. For proper windshield wiper blade length and type, see *Normal Maintenance Replacement Parts on page 482*.

To replace the wiper blade assembly, do the following:

1. Turn the ignition to ON with the engine off.
2. Turn on the windshield wipers and turn them off again when the wipers are in the out-wipe position. The driver's side blade will be straight up and down on the windshield.
3. Pull the windshield wiper assembly away from the windshield.



4. Lift the wiper blade assembly up so it is in a T-shaped position. You should be able to see a tab.
5. Squeeze the tab together and pull the wiper blade assembly down far enough to release it from the J-hooked end of the wiper arm. Slide the assembly away from the arm.
   Allowing the wiper blade arm to touch the windshield when no wiper blade is installed could damage the windshield. Any damage that occurs would not be covered by your warranty. Do not allow the wiper blade arm to touch the windshield.



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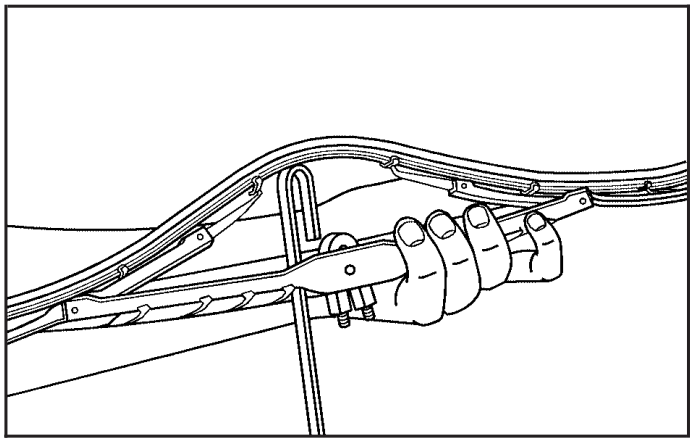
6. Replace the blade with a new one.



7. Reinstall the wiper blade assembly by sliding it over the wiper arm to engage the J-hooked end. Pull up on the assembly to lock it into place.
8. Repeat the steps for the other wiper.

### Rear Wiper Blade Replacement

To replace the rear wiper blade follow the steps listed previously.

## Tires

Your new vehicle comes with high-quality tires made by a leading tire manufacturer. If you ever have questions about your tire warranty and where to obtain service, see your GM Warranty booklet for details. For additional information refer to the tire manufacturer's booklet included with your vehicle.



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**⚠ CAUTION:**

- **Poorly maintained and improperly used tires are dangerous.**
- **Overloading your tires can cause overheating as a result of too much friction. You could have an air-out and a serious accident. See *Loading Your Vehicle on page 322*.**
- **Underinflated tires pose the same danger as overloaded tires. The resulting accident could cause serious injury. Check all tires frequently to maintain the recommended pressure. Tire pressure should be checked when your tires are cold. See *Inflation - Tire Pressure on page 407*.**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

- **Overinflated tires are more likely to be cut, punctured, or broken by a sudden impact — such as when you hit a pothole. Keep tires at the recommended pressure.**
- **Worn, old tires can cause accidents. If your tread is badly worn, or if your tires have been damaged, replace them.**

**See *High-Speed Operation on page 409* for inflation pressure adjustment for high speed driving.**



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## Low-Profile Performance Tire

If your vehicle has P255/50R20 size tires, they are classified as low-profile performance tires. These tires are designed for very responsive driving on wet or dry pavement. You may also notice more road noise with low-profile performance tires and that they tend to wear faster.

***Notice:*** **If your vehicle has low-profile tires, they are more susceptible to damage from road hazards or curb impact than standard profile tires. Tire and/or wheel assembly damage can occur when coming into contact with road hazards like, potholes, or sharp edged objects, or when sliding into a curb. Your GM warranty does not cover this type of damage. Keep tires set to the correct inflation pressure and, when possible avoid contact with curbs, potholes, and other road hazards.**

## Winter Tires

If you expect to drive on snow or ice covered roads often, you may want to get winter tires for your vehicle. All season tires provide good overall performance on most surfaces but they may not offer the traction you would like or the same level of performance as winter tires on snow or ice covered roads.

Winter tires, in general, are designed for increased traction on snow and ice covered roads. With winter tires, there may be decreased dry road traction, increased road noise, and shorter tread life. After switching to winter tires, be alert for changes in vehicle handling and braking.

See your dealer for details regarding winter tire availability and proper tire selection. Also, see *Buying New Tires on page 416*.

If you choose to use winter tires:

- Use tires of the same brand and tread type on all four wheel positions.
- Use only radial ply tires of the same size, load range, and speed rating as the original equipment tires.

Winter tires with the same speed rating as your original equipment tires may not be available for H, V, W, Y, and ZR speed rated tires. If you choose winter tires with a lower speed rating, never exceed the tire's maximum speed capability.



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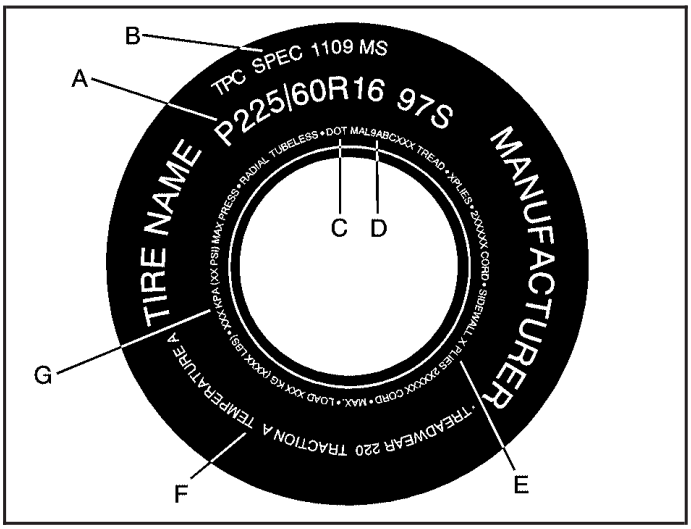
## Tire Sidewall Labeling

Useful information about a tire is molded into its sidewall. The examples below show a typical passenger vehicle tire and a compact spare tire sidewall.




**Passenger (P-Metric) Tire Example**

**(A) Tire Size:** The tire size is a combination of letters and numbers used to define a particular tire's width, height, aspect ratio, construction type, and service description. See the "Tire Size" illustration later in this section for more detail.

**(B) TPC Spec (Tire Performance Criteria Specification):** Original equipment tires designed to GM's specific tire performance criteria have a TPC specification code molded onto the sidewall. GM's TPC specifications meet or exceed all federal safety guidelines.

**(C) DOT (Department of Transportation):** The Department of Transportation (DOT) code indicates that the tire is in compliance with the U.S. Department of Transportation Motor Vehicle Safety Standards.



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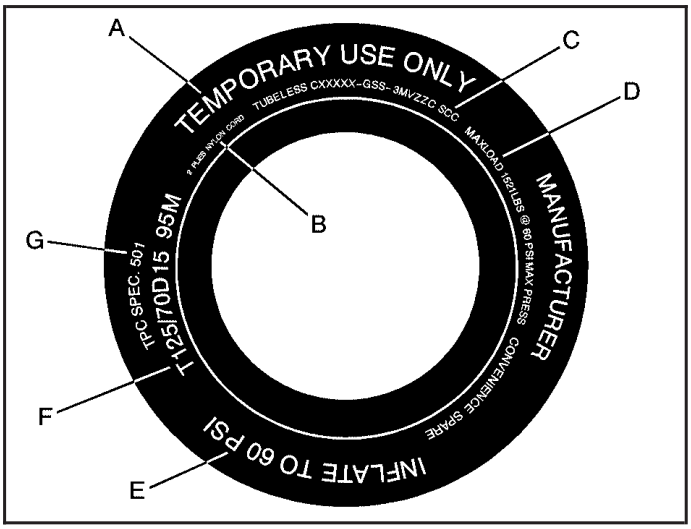
**(D) Tire Identification Number (TIN):** The letters and numbers following DOT (Department of Transportation) code is the Tire Identification Number (TIN). The TIN shows the manufacturer and plant code, tire size, and date the tire was manufactured. The TIN is molded onto both sides of the tire, although only one side may have the date of manufacture.

**(E) Tire Ply Material:** The type of cord and number of plies in the sidewall and under the tread.

**(F) Uniform Tire Quality Grading (UTQG):** Tire manufacturers are required to grade tires based on three performance factors: treadwear, traction, and temperature resistance. For more information see *Uniform Tire Quality Grading on page 419*.

**(G) Maximum Cold Inflation Load Limit:** Maximum load that can be carried and the maximum pressure needed to support that load.




**Compact Spare Tire Example**

**(A) Temporary Use Only:** The compact spare tire or temporary use tire has a tread life of approximately 3,000 miles (5 000 km) and should not be driven at speeds over 65 mph (105 km/h). The compact spare tire is for emergency use when a regular road tire has lost air and gone flat. If your vehicle has a compact spare tire, see *Compact Spare Tire on page 442* and *If a Tire Goes Flat on page 423*.



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**(B) Tire Ply Material:** The type of cord and number of plies in the sidewall and under the tread.

**(C) Tire Identification Number (TIN):** The letters and numbers following the DOT (Department of Transportation) code is the Tire Identification Number (TIN). The TIN shows the manufacturer and plant code, tire size, and date the tire was manufactured. The TIN is molded onto both sides of the tire, although only one side may have the date of manufacture.

**(D) Maximum Cold Inflation Load Limit:** Maximum load that can be carried and the maximum pressure needed to support that load.

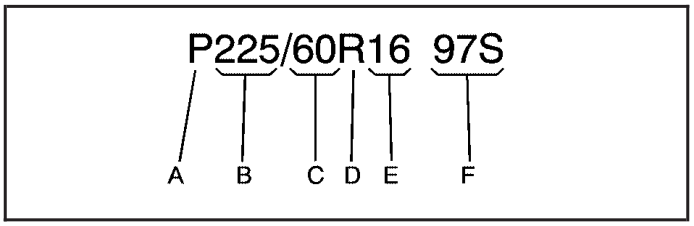
**(E) Tire Inflation:** The temporary use tire or compact spare tire should be inflated to 60 psi (420 kPa). For more information on tire pressure and inflation see *Inflation - Tire Pressure on page 407*.

**(F) Tire Size:** A combination of letters and numbers define a tire's width, height, aspect ratio, construction type, and service description. The letter T as the first character in the tire size means the tire is for temporary use only.

**(G) TPC Spec (Tire Performance Criteria Specification):** Original equipment tires designed to GM's specific tire performance criteria have a TPC specification code molded onto the sidewall. GM's TPC specifications meet or exceed all federal safety guidelines.

## Tire Size

The following illustration shows an example of a typical passenger vehicle tire size.




**(A) Passenger (P-Metric) Tire:** The United States version of a metric tire sizing system. The letter P as the first character in the tire size means a passenger vehicle tire engineered to standards set by the U.S. Tire and Rim Association.



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**(B) Tire Width:** The three-digit number indicates the tire section width in millimeters from sidewall to sidewall.

**(C) Aspect Ratio:** A two-digit number that indicates the tire height-to-width measurements. For example, if the tire size aspect ratio is 60, as shown in item C of the illustration, it would mean that the tire's sidewall is 60 percent as high as it is wide.

**(D) Construction Code:** A letter code is used to indicate the type of ply construction in the tire. The letter R means radial ply construction; the letter D means diagonal or bias ply construction; and the letter B means belted-bias ply construction.

**(E) Rim Diameter:** Diameter of the wheel in inches.

**(F) Service Description:** These characters represent the load range and speed rating of the tire. The load index represents the load carry capacity a tire is certified to carry. The load index can range from 1 to 279. The speed rating is the maximum speed a tire is certified to carry a load. Speed ratings range from A to Z.

## Tire Terminology and Definitions

**Air Pressure:** The amount of air inside the tire pressing outward on each square inch of the tire. Air pressure is expressed in pounds per square inch (psi) or kilopascal (kPa).

**Accessory Weight:** This means the combined weight of optional accessories. Some examples of optional accessories are, automatic transmission/transaxle, power steering, power brakes, power windows, power seats, and air conditioning.

**Aspect Ratio:** The relationship of a tire's height to its width.

**Belt:** A rubber coated layer of cords that is located between the plies and the tread. Cords may be made from steel or other reinforcing materials.

**Bead:** The tire bead contains steel wires wrapped by steel cords that hold the tire onto the rim.

**Bias Ply Tire:** A pneumatic tire in which the plies are laid at alternate angles less than 90 degrees to the centerline of the tread.



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**Cold Tire Pressure:** The amount of air pressure in a tire, measured in pounds per square inch (psi) or kilopascals (kPa) before a tire has built up heat from driving. See *Inflation - Tire Pressure on page 407*.

**Curb Weight:** This means the weight of a motor vehicle with standard and optional equipment including the maximum capacity of fuel, oil, and coolant, but without passengers and cargo.

**DOT Markings:** A code molded into the sidewall of a tire signifying that the tire is in compliance with the U.S. Department of Transportation (DOT) motor vehicle safety standards. The DOT code includes the Tire Identification Number (TIN), an alphanumeric designator which can also identify the tire manufacturer, production plant, brand, and date of production.

**GVWR:** Gross Vehicle Weight Rating. See *Loading Your Vehicle on page 322*.

**GAWR FRT:** Gross Axle Weight Rating for the front axle. See *Loading Your Vehicle on page 322*.

**GAWR RR:** Gross Axle Weight Rating for the rear axle. See *Loading Your Vehicle on page 322*.

**Intended Outboard Sidewall:** The side of an asymmetrical tire, that must always face outward when mounted on a vehicle.

**Kilopascal (kPa):** The metric unit for air pressure.

**Light Truck (LT-Metric) Tire:** A tire used on light duty trucks and some multipurpose passenger vehicles.

**Load Index:** An assigned number ranging from 1 to 279 that corresponds to the load carrying capacity of a tire.

**Maximum Inflation Pressure:** The maximum air pressure to which a cold tire may be inflated. The maximum air pressure is molded onto the sidewall.

**Maximum Load Rating:** The load rating for a tire at the maximum permissible inflation pressure for that tire.



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**Maximum Loaded Vehicle Weight:** The sum of curb weight, accessory weight, vehicle capacity weight, and production options weight.

**Normal Occupant Weight:** The number of occupants a vehicle is designed to seat multiplied by 150 lbs (68 kg). See *Loading Your Vehicle on page 322*.

**Occupant Distribution:** Designated seating positions.

**Outward Facing Sidewall:** The side of an asymmetrical tire that has a particular side that faces outward when mounted on a vehicle. The side of the tire that contains a whitewall, bears white lettering, or bears manufacturer, brand, and/or model name molding that is higher or deeper than the same moldings on the other sidewall of the tire.

**Passenger (P-Metric) Tire:** A tire used on passenger cars and some light duty trucks and multipurpose vehicles.

**Recommended Inflation Pressure:** Vehicle manufacturer's recommended tire inflation pressure as shown on the tire placard. See *Inflation - Tire Pressure on page 407* and *Loading Your Vehicle on page 322*.

**Radial Ply Tire:** A pneumatic tire in which the ply cords that extend to the beads are laid at 90 degrees to the centerline of the tread.

**Rim:** A metal support for a tire and upon which the tire beads are seated.

**Sidewall:** The portion of a tire between the tread and the bead.

**Speed Rating:** An alphanumeric code assigned to a tire indicating the maximum speed at which a tire can operate.

**Traction:** The friction between the tire and the road surface. The amount of grip provided.

**Tread:** The portion of a tire that comes into contact with the road.



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**Treadwear Indicators:** Narrow bands, sometimes called wear bars, that show across the tread of a tire when only 1/16 inch (1.6 mm) of tread remains. See *When It Is Time for New Tires on page 416*.

**UTQGS (Uniform Tire Quality Grading Standards):** A tire information system that provides consumers with ratings for a tire's traction, temperature, and treadwear. Ratings are determined by tire manufacturers using government testing procedures. The ratings are molded into the sidewall of the tire. See *Uniform Tire Quality Grading on page 419*.

**Vehicle Capacity Weight:** The number of designated seating positions multiplied by 150 lbs (68 kg) plus the rated cargo load. See *Loading Your Vehicle on page 322*.

**Vehicle Maximum Load on the Tire:** Load on an individual tire due to curb weight, accessory weight, occupant weight, and cargo weight.

**Vehicle Placard:** A label permanently attached to a vehicle showing the vehicle's capacity weight and the original equipment tire size and recommended inflation pressure. See "Tire and Loading Information Label" under *Loading Your Vehicle on page 322*.

## Inflation - Tire Pressure

Tires need the correct amount of air pressure to operate effectively.

***Notice:*** **Do not let anyone tell you that under-inflation or over-inflation is all right. It is not. If your tires do not have enough air (under-inflation), you can get the following:**

- **Too much flexing**
- **Too much heat**
- **Tire overloading**
- **Premature or irregular wear**
- **Poor handling**
- **Reduced fuel economy**

**If your tires have too much air (over-inflation), you can get the following:**

- **Unusual wear**
- **Poor handling**
- **Rough ride**
- **Needless damage from road hazards**



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A Tire and Loading Information label is attached to the vehicle's center pillar (B-pillar). This label shows your vehicle's original equipment tires and the correct inflation pressures for your tires when they are cold. The recommended cold tire inflation pressure, shown on the label, is the minimum amount of air pressure needed to support your vehicle's maximum load carrying capacity.

For additional information regarding how much weight your vehicle can carry, and an example of the Tire and Loading Information label, see *Loading Your Vehicle on page 322*. How you load your vehicle affects vehicle handling and ride comfort. Never load your vehicle with more weight than it was designed to carry.

## When to Check

Check your tires once a month or more. Do not forget to check the compact spare tire, it should be at 60 psi (420 kPa). For additional information regarding the compact spare tire, see *Compact Spare Tire on page 442*.

## How to Check

Use a good quality pocket-type gage to check tire pressure. You cannot tell if your tires are properly inflated simply by looking at them. Radial tires may look properly inflated even when they are under-inflated. Check the tire's inflation pressure when the tires are cold. Cold means your vehicle has been sitting for at least three hours or driven no more than 1 mile (1.6 km).

Remove the valve cap from the tire valve stem. Press the tire gage firmly onto the valve to get a pressure measurement. If the cold tire inflation pressure matches the recommended pressure on the Tire and Loading Information label, no further adjustment is necessary. If the inflation pressure is low, add air until you reach the recommended amount.

If you overfill the tire, release air by pushing on the metal stem in the center of the tire valve. Re-check the tire pressure with the tire gage.

Be sure to put the valve caps back on the valve stems. They help prevent leaks by keeping out dirt and moisture.



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## High-Speed Operation

**⚠ CAUTION:**

**Driving at high speeds, 100 mph (160 km/h) or higher, puts an additional strain on tires. Sustained high-speed driving causes excessive heat build up and can cause sudden tire failure. You could have a crash and you or others could be killed. Some high-speed rated tires require inflation pressure adjustment for high speed operation. When speed limits and road conditions are such that a vehicle can be driven at high speeds, make sure the tires are rated for high speed operation, in excellent condition, and set to the correct cold tire inflation pressure for the vehicle load.**

If you will be driving at high speeds, speeds of 100 mph (160 km/h) or higher, where it is legal, set the cold inflation pressure to the maximum inflation pressure shown on the tire sidewall, or 38 psi (265 kPa), whichever is lower. See the example following. When you end this high-speed driving, return the tires to the cold inflation pressure shown on the Tire and Loading Information label. See *Loading Your Vehicle on page 322*.

Example:

You will find the maximum load and inflation pressure molded on the tire's sidewall, in small letters, near the rim flange. It will read something like this: Maximum load 690 kg (1521 lbs) 300 kPa (44 psi) Max. Press.

For this example, you would set the inflation pressure for high-speed driving at 38 psi (265 kPa).



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## Tire Pressure Monitor System

The Tire Pressure Monitor System (TPMS) uses radio and sensor technology to check tire pressure levels. If your vehicle has this feature, sensors are mounted on each tire and wheel assembly, except for the compact spare tire and wheel. The TPMS sensors monitor the air pressure in your vehicle's tires and transmit the tire pressure readings to a receiver located in the vehicle. The TPMS is designed to alert the driver if a low pressure condition exists.

Using the Driver Information Center (DIC), the driver can also check tire pressure levels using the DIC. For additional information and details about the DIC operation and displays see *DIC Controls and Displays on page 215* and *DIC Warnings and Messages on page 220*.

When a low tire pressure condition is detected, the TPMS illuminates the low tire pressure warning symbol located in the instrument panel cluster, and at the same time a DIC message to check the pressure in a specific tire also appears on the DIC display. The low tire pressure warning symbol and the CHECK TIRE PRESSURE message on the DIC display appear at each ignition cycle until the tires are inflated to the correct inflation pressure.

You may notice, during cooler weather conditions, the low tire pressure warning light and DIC warning message may come on when the vehicle is first started, and then turn off as you start to drive. This could be an early indicator that the air pressure in the tire(s) is getting low and needs to be inflated to the proper pressure.



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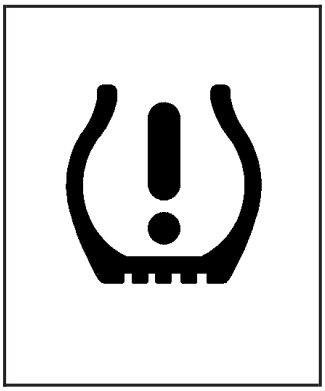
Each tire, including the spare (if provided), should be checked monthly when cold and inflated to the inflation pressure recommended by the vehicle manufacturer on the vehicle placard or tire inflation pressure label. (If your vehicle has tires of a different size than the size indicated on the vehicle placard or tire inflation pressure label, you should determine the proper tire inflation pressure for those tires.)



As an added safety feature, your vehicle has been equipped with a tire pressure monitoring system (TPMS) that illuminates a low tire pressure telltale when one or more of your tires is significantly under-inflated.

Accordingly, when the low tire pressure telltale illuminates, you should stop and check your tires as soon as possible, and inflate them to the proper pressure. Driving on a significantly under-inflated tire causes the tire to overheat and can lead to tire failure. Under-inflation also reduces fuel efficiency and tire tread life, and may affect the vehicle's handling and stopping ability.

Please note that the TPMS is not a substitute for proper tire maintenance, and it is the driver's responsibility to maintain correct tire pressure, even if under-inflation has not reached the level to trigger illumination of the TPMS low tire pressure telltale.

Your vehicle has also been equipped with a TPMS malfunction indicator to indicate when the system is not operating properly. The TPMS malfunction indicator is combined with the low tire pressure telltale. When the system detects a malfunction, the telltale will flash for approximately one minute and then remain continuously illuminated. This sequence will continue upon subsequent vehicle start-ups as long as the malfunction exists.



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When the malfunction indicator is illuminated, the system may not be able to detect or signal low tire pressure as intended. TPMS malfunctions may occur for a variety of reasons, including the installation of replacement or alternate tires or wheels on the vehicle that prevent the TPMS from functioning properly. Always check the TPMS malfunction telltale after replacing one or more tires or wheels on your vehicle to ensure that the replacement or alternate tires and wheels allow the TPMS to continue to function properly.

The Tire and Loading Information label shows the size of your vehicle's original tires and their recommended cold inflation pressures. See *Loading Your Vehicle on page 322*, for the location of the tire and loading information label. Also see *Inflation - Tire Pressure on page 407*.

Your vehicle's TPMS can warn you about a low tire pressure condition but it does not replace normal tire maintenance. See *Tire Inspection and Rotation on page 414* and *Tires on page 398*.

***Notice:*** **Do not use a tire sealant if your vehicle has Tire Pressure Monitors. The liquid sealant can damage the tire pressure monitor sensors.**

## TPM Sensor Identification Codes

Each TPMS sensor has a unique identification code. Any time you replace one or more of the TPMS sensors or rotate your vehicle's tires, the identification codes need to be matched to the new tire/wheel position. The sensors are matched to the tire/wheel positions in the following order: driver's side front tire, passenger's side front tire, passenger's side rear tire, and driver's side rear tire using a TPMS diagnostic tool. See your dealer for service.

The TPMS sensors can also be matched to each tire/wheel position by increasing or decreasing the tire's air pressure. If increasing the tire's air pressure, do not exceed the maximum inflation pressure indicated on the tire's sidewall.

You have two minutes to match the first tire/wheel position, and five minutes overall, to match all four tire/wheel positions. If it takes longer than two minutes, to match the first tire and wheel, or more than five minutes to match all four tire and wheel positions, the matching process stops and you need to start over.



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The TPM matching process is outlined below:

1. Set the parking brake.
2. Turn the ignition switch to ON with the engine off.
3. Using the DIC, press the vehicle information button until the PRESS ✓ TO RELEARN TIRE POSITIONS message displays.
4. Press the Set/Reset button. The horn sounds twice to indicate the TPMS receiver is ready, and the TIRE LEARNING ACTIVE message displays. The TPMS low tire warning light flashes throughout the matching procedure.
5. Start with the driver's side front tire.
6. Remove the valve cap from the valve stem. Activate the TPM sensor by increasing or decreasing the tire's air pressure for 10 seconds, or until a horn chirp sounds. The horn chirp, which may take up to 30 seconds to sound, confirms that the sensor identification code has been matched to this tire position. To decrease the tire's air-pressure use the pointed end of the valve cap, a pencil-style air pressure gage, or a key.
7. Proceed to the passenger's side front tire, and repeat the procedure in Step 6.
8. Proceed to the passenger's side rear tire, and repeat the procedure in Step 6.
9. Proceed to the driver's side rear tire, and repeat the procedure in Step 6.
10. After hearing the confirming horn chirp, for the driver's side rear tire, the horn sounds two more times to signal the tire learning model is no longer active. Turn the ignition switch to OFF.
11. Set all four tires to the recommended air pressure level as indicated on the tire and loading information label.
12. Put the valve caps back on the valve stems.

The spare tire does not have a TPMS sensor. If you replace one of the road tires with the spare, the SERVICE TIRE MONITOR SYSTEM message displays on the DIC screen. This message should go off once you re-install the road tire containing the TPMS sensor.



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## Federal Communications Commission (FCC) and Industry and Science Canada

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

This device complies with RSS-210 of Industry Canada. Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

Changes or modifications to this system by other than an authorized service facility could void authorization to use this equipment.

## Tire Inspection and Rotation

Tire rotation is not recommended if your vehicle has the following tire combinations:

- P235/65R17 size tires on the front wheels and P255/60R17 size tires on the rear wheels.
- P235/60R18 size tires on the front wheels and P255/55R18 size tires on the rear wheels.

Different tire sizes should not be rotated front to rear. Each tire and wheel should only be used in its original front or rear position.

Tire rotation is recommended if your vehicle is equipped with P255/50R20 size tires on all four wheel positions. These tires should be rotated every 5,000 to 8,000 miles (8 000 to 13 000 km)

Any time you notice unusual wear, rotate your tires as soon as possible and check wheel alignment. Also check for damaged tires or wheels. See *When It Is Time for New Tires on page 416* and *Wheel Replacement on page 421* for more information.



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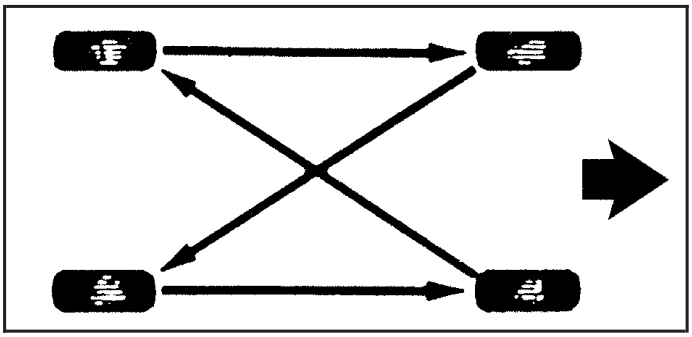
The purpose of regular rotation is to achieve more uniform wear for all tires on the vehicle. The first rotation is the most important. See *Scheduled Maintenance on page 471*.



When rotating P255/50R20 size tires, always use the correct rotation pattern shown here.

Do not include the compact spare tire in the tire rotation.

After the tires have been rotated, adjust the front and rear inflation pressures as shown on the Tire and Loading Information label.

Vehicles that have the Tire Pressure Monitor System (TPMS) will need to have the TPMS sensors reset after a tire rotation, see *Tire Pressure Monitor System on page 410*.

Make certain that all wheel nuts are properly tightened. See “Wheel Nut Torque” under *Capacities and Specifications on page 464*.

### ⚠ CAUTION:

**Rust or dirt on a wheel, or on the parts to which it is fastened, can make wheel nuts become loose after time. The wheel could come off and cause an accident. When you change a wheel, remove any rust or dirt from places where the wheel attaches to the vehicle. In an emergency, you can use a cloth or a paper towel to do this; but be sure to use a scraper or wire brush later, if needed, to get all the rust or dirt off. See *Changing a Flat Tire on page 424*.**



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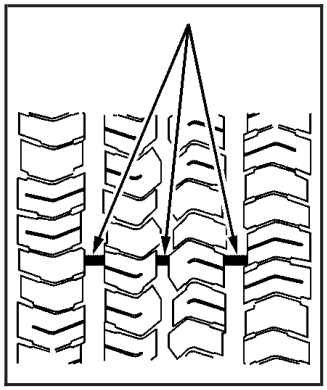
## When It Is Time for New Tires



One way to tell when it is time for new tires is to check the treadwear indicators, which will appear when your tires have only 1/16 inch (1.6 mm) or less of tread remaining. Some commercial truck tires may not have treadwear indicators.

You need a new tire if any of the following statements are true:

- You can see the indicators at three or more places around the tire.
- You can see cord or fabric showing through the tire's rubber.
- The tread or sidewall is cracked, cut or snagged deep enough to show cord or fabric.
- The tire has a bump, bulge, or split.
- The tire has a puncture, cut, or other damage that cannot be repaired well because of the size or location of the damage.

## Buying New Tires

GM has developed and matched specific tires for your vehicle. The original equipment tires installed on your vehicle, when it was new, were designed to meet General Motors Tire Performance Criteria Specification (TPC spec) system rating. If you need replacement tires, GM strongly recommends that you get tires with the same TPC Spec rating. This way, your vehicle will continue to have tires that are designed to give the same performance and vehicle safety, during normal use, as the original tires.

GM's exclusive TPC Spec system considers over a dozen critical specifications that impact the overall performance of your vehicle, including brake system performance, ride and handling, traction control, and tire pressure monitoring performance.



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GM's TPC Spec number is molded onto the tire's sidewall by the tire manufacturer. If the tires have an all-season tread design, the TPC spec number will be followed by an MS for mud and snow. See *Tire Sidewall Labeling on page 401* for additional information.

Winter tires with the same speed rating as your original equipment tires may not be available for H, V, W and ZR speed rated tires. If you choose snow tires with a lower speed rating, never exceed the tire's maximum speed capability.

**⚠ CAUTION:**

**Mixing tires could cause you to lose control while driving. If you mix tires of different sizes (other than those originally installed on your vehicle), brands, or types (radial and bias-belted tires), the vehicle may not handle properly, and you could have a crash. Using tires of different sizes (other than those originally**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

**installed on your vehicle), brands, or types may also cause damage to your vehicle. Be sure to use the correct size, brand, and type of tires on all wheels. It is all right to drive with your vehicle's compact spare temporarily, it was developed for use on your vehicle. See *Compact Spare Tire on page 442*.**

**⚠ CAUTION:**

**If you use bias-ply tires on your vehicle, the wheel rim flanges could develop cracks after many miles of driving. A tire and/or wheel could fail suddenly, causing a crash. Use only radial-ply tires with the wheels on your vehicle.**



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If you must replace your vehicle's tires with those that do not have a TPC Spec number, make sure they are the same size, load range, speed rating, and construction type (radial and bias-belted tires) as your vehicle's original tires.

Vehicles that have a tire pressure monitoring system may give an inaccurate low-pressure warning if non-TPC spec rated tires are installed on your vehicle. Non-TPC Spec rated tires may give a low-pressure warning that is higher or lower than the proper warning level you would get with TPC Spec rated tires. See *Tire Pressure Monitor System on page 410*.

Your vehicle's original equipment tires are listed on the Tire and Loading Information Label. This label is attached to the vehicle's center pillar (B-pillar). See *Loading Your Vehicle on page 322*, for more information about the Tire and Loading Information Label and its location on your vehicle.

## Different Size Tires and Wheels

If you add wheels or tires that are a different size than your original equipment wheels and tires, this may affect the way your vehicle performs, including its braking, ride and handling characteristics, stability, and resistance to rollover. Additionally, if your vehicle has electronic systems such as, anti-lock brakes, traction control, and electronic stability control, the performance of these systems can be affected.

**⚠ CAUTION:**

**If you add different sized wheels, your vehicle may not provide an acceptable level of performance and safety if tires not recommended for those wheels are selected. You may increase the chance that you will crash and suffer serious injury. Only use GM specific wheel and tire systems developed for your vehicle, and have them properly installed by a GM certified technician.**

See *Buying New Tires on page 416* and *Accessories and Modifications on page 347* for additional information.



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## Uniform Tire Quality Grading

Quality grades can be found where applicable on the tire sidewall between tread shoulder and maximum section width. For example:

### Treadwear 200 Traction AA Temperature A

The following information relates to the system developed by the United States National Highway Traffic Safety Administration (NHTSA), which grades tires by treadwear, traction, and temperature performance. This applies only to vehicles sold in the United States. The grades are molded on the sidewalls of most passenger car tires. The Uniform Tire Quality Grading (UTQG) system does not apply to deep tread, winter-type snow tires, space-saver, or temporary use spare tires, tires with nominal rim diameters of 10 to 12 inches (25 to 30 cm), or to some limited-production tires.

While the tires available on General Motors passenger cars and light trucks may vary with respect to these grades, they must also conform to federal safety requirements and additional General Motors Tire Performance Criteria (TPC) standards.

### Treadwear

The treadwear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test course. For example, a tire graded 150 would wear one and a half (1.5) times as well on the government course as a tire graded 100. The relative performance of tires depends upon the actual conditions of their use, however, and may depart significantly from the norm due to variations in driving habits, service practices, and differences in road characteristics and climate.

### Traction – AA, A, B, C

The traction grades, from highest to lowest, are AA, A, B, and C. Those grades represent the tire's ability to stop on wet pavement as measured under controlled conditions on specified government test surfaces of asphalt and concrete. A tire marked C may have poor traction performance.

**Warning:** The traction grade assigned to this tire is based on straight-ahead braking traction tests, and does not include acceleration, cornering, hydroplaning, or peak traction characteristics.



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### Temperature – A, B, C

The temperature grades are A (the highest), B, and C, representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel. Sustained high temperature can cause the material of the tire to degenerate and reduce tire life, and excessive temperature can lead to sudden tire failure. The grade C corresponds to a level of performance which all passenger car tires must meet under the Federal Motor Vehicle Safety Standard No. 109. Grades B and A represent higher levels of performance on the laboratory test wheel than the minimum required by law.

**Warning:** The temperature grade for this tire is established for a tire that is properly inflated and not overloaded. Excessive speed, underinflation, or excessive loading, either separately or in combination, can cause heat buildup and possible tire failure.

## Wheel Alignment and Tire Balance

The tires and wheels on your vehicle were aligned and balanced carefully at the factory to give you the longest tire life and best overall performance. Adjustments to wheel alignment and tire balancing will not be necessary on a regular basis. However, if you notice unusual tire wear or your vehicle pulling to one side or the other, the alignment may need to be checked. If you notice your vehicle vibrating when driving on a smooth road, your tires and wheels may need to be rebalanced. See your dealer for proper diagnosis.



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## Wheel Replacement

Replace any wheel that is bent, cracked, or badly rusted or corroded. If wheel nuts keep coming loose, the wheel, wheel bolts, and wheel nuts should be replaced. If the wheel leaks air, replace it (except some aluminum wheels, which can sometimes be repaired). See your dealer if any of these conditions exist.

Your dealer will know the kind of wheel you need.

Each new wheel should have the same load-carrying capacity, diameter, width, offset and be mounted the same way as the one it replaces.

If you need to replace any of your wheels, wheel bolts, or wheel nuts, replace them only with new GM original equipment parts. This way, you will be sure to have the right wheel, wheel bolts, and wheel nuts for your vehicle.

**⚠ CAUTION:**

**Using the wrong replacement wheels, wheel bolts, or wheel nuts on your vehicle can be dangerous. It could affect the braking and handling of your vehicle, make your tires lose air and make you lose control. You could have a collision in which you or others could be injured. Always use the correct wheel, wheel bolts, and wheel nuts for replacement.**

***Notice:*** **The wrong wheel can also cause problems with bearing life, brake cooling, speedometer or odometer calibration, headlamp aim, bumper height, vehicle ground clearance, and tire or tire chain clearance to the body and chassis.**

See *Changing a Flat Tire on page 424* for more information.



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## Used Replacement Wheels

**⚠ CAUTION:**

**Putting a used wheel on your vehicle is dangerous. You cannot know how it has been used or how far it has been driven. It could fail suddenly and cause a crash. If you have to replace a wheel, use a new GM original equipment wheel.**

## Tire Chains

**⚠ CAUTION:**

**If your vehicle has P255/50R20 size tires, do not use tire chains. They can damage your vehicle because there is not enough clearance. Tire chains used on a vehicle**

**CAUTION: (Continued)**

**CAUTION: (Continued)**

**without the proper amount of clearance can cause damage to the brakes, suspension, or other vehicle parts. The area damaged by the tire chains could cause you to lose control of your vehicle and you or others may be injured in a crash.**

**Use another type of traction device only if its manufacturer recommends it for use on your vehicle and tire size combination and road conditions. Follow that manufacturer's instructions.To help avoid damage to your vehicle, drive slowly, readjust or remove the device if it is contacting your vehicle, and do not spin the vehicle's wheels.**

**If you do find traction devices that will fit, install them on the rear tires.**



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***Notice:*** **If your vehicle has a tire size other than P255/50R20 use tire chains only where legal and only when you must. Use chains that are the proper size for your tires. Install them on the tires of the rear axle. Do not use chains on the tires of the front axle. Tighten them as tightly as possible with the ends securely fastened. Drive slowly and follow the chain manufacturer's instructions. If you can hear the chains contacting your vehicle, stop and retighten them. If the contact continues, slow down until it stops. Driving too fast or spinning the wheels with chains on will damage your vehicle.**

## If a Tire Goes Flat

It is unusual for a tire to blowout while you are driving, especially if you maintain your vehicle's tires properly. If air goes out of a tire, it is much more likely to leak out slowly. But if you should ever have a blowout, here are a few tips about what to expect and what to do:

If a front tire fails, the flat tire will create a drag that pulls the vehicle toward that side. Take your foot off the accelerator pedal and grip the steering wheel firmly. Steer to maintain lane position, and then gently brake to a stop well out of the traffic lane.

A rear blowout, particularly on a curve, acts much like a skid and may require the same correction you would use in a skid. In any rear blowout remove your foot from the accelerator pedal. Get the vehicle under control by steering the way you want the vehicle to go. It may be very bumpy and noisy, but you can still steer. Gently brake to a stop, well off the road if possible.



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**⚠ CAUTION:**

**Lifting a vehicle and getting under it to do maintenance or repairs is dangerous without the appropriate safety equipment and training. The jack provided with your vehicle is designed only for changing a flat tire. If it is used for anything else, you or others could be badly injured or killed if the vehicle slips off the jack. Use the jack provided with your vehicle only for changing a flat tire.**

If a tire goes flat, the next part shows how to use the jacking equipment to change a flat tire safely.

## Changing a Flat Tire

If a tire goes flat, avoid further tire and wheel damage by driving slowly to a level place. Turn on your vehicle's hazard warning flashers. See *Hazard Warning Flashers on page 166* for more information.

**⚠ CAUTION:**

**Changing a tire can be dangerous. The vehicle can slip off the jack and roll over or fall on you or other people. You and they could be badly injured or even killed. Find a level place to change your tire. To help prevent the vehicle from moving:**

1. **Set the parking brake firmly.**
2. **Put the shift lever in PARK (P).**

**CAUTION: (Continued)**



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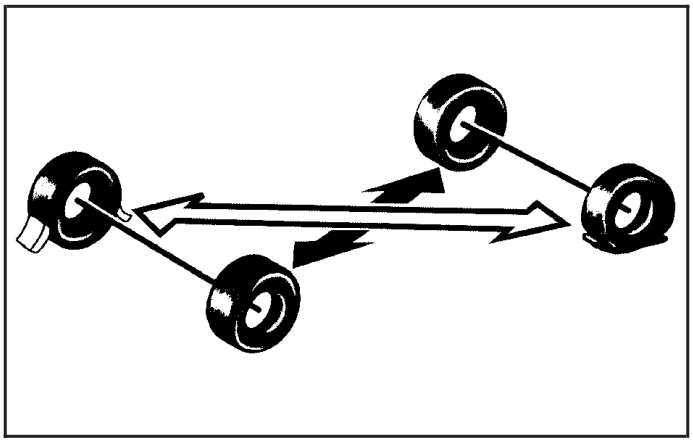
**CAUTION: (Continued)**

3. **Turn off the engine and do not restart while the vehicle is raised.**
4. **Do not allow passengers to remain in the vehicle.**

**To be even more certain the vehicle will not move, you should put blocks at the front and rear of the tire farthest away from the one being changed. That would be the tire, on the other side, at the opposite end of the vehicle.**

When your vehicle has a flat tire, use the following example as a guide to assist you in the placement of wheel blocks.



The following information will tell you next how to use the jack and change a tire.



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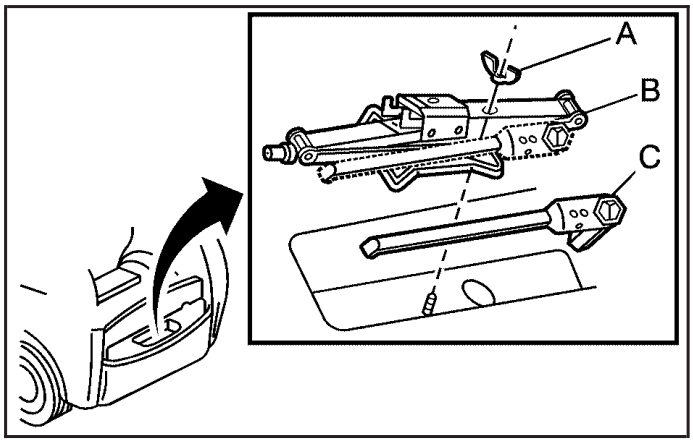
## Removing the Spare Tire and Tools

The equipment you will need is located in the rear of the vehicle. To access the equipment, do the following:

1. Remove the storage bin to access the jack if your vehicle has the cargo management system.

   If your vehicle has the third row seat, remove the head rest storage tray to access the jack.




2. Turn the wing nut (A) holding the jack (B) (and storage tray, if applicable) counterclockwise and remove it.
3. Remove the jack and wheel wrench (C).



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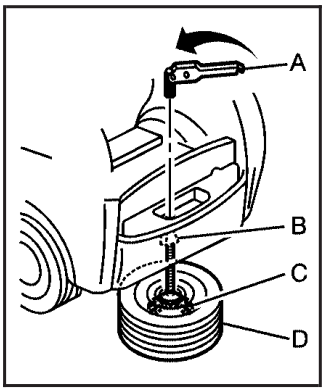
## Removing the Spare Tire

The compact spare tire is located under the vehicle, ahead of the rear bumper. See *Compact Spare Tire on page 442* for more information about the compact spare.

To remove the spare tire from the vehicle, do the following:




A. Wheel Wrench
B. Cable
C. Retainer
D. Compact Spare Tire

1. Open the liftgate. See *Power Liftgate on page 104* for more information.
2. Open the storage compartment door of the cargo management system that is nearest the liftgate and remove the container.
3. Attach the wheel wrench (A) into the hoist shaft.
4. Turn the wheel wrench counterclockwise to lower the spare tire to the ground. Continue turning the wrench until the spare tire (D) can be pulled out from under the vehicle.



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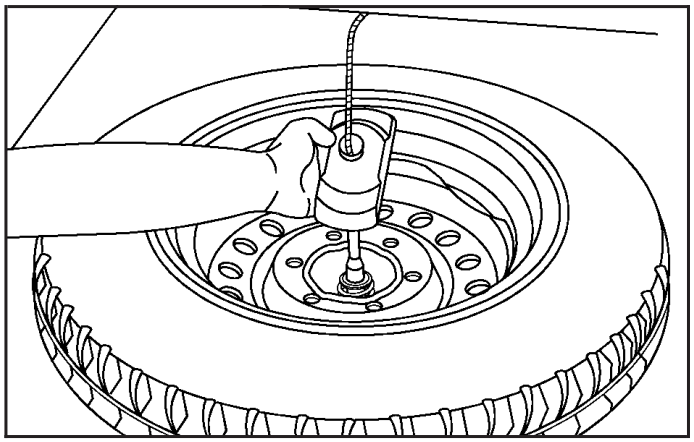
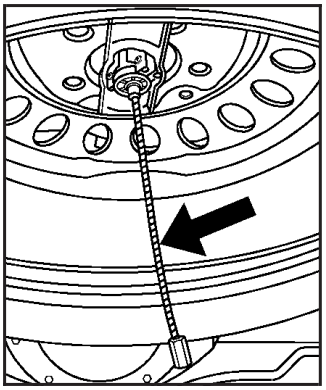


5. Tilt the retainer (C) and slip it through the wheel opening to remove the spare tire from the cable (B).
6. Turn the wrench clockwise until you feel two slips or hear two clicks after removing the spare tire to raise the cable back up.

   Do not store a full-size or a flat road tire under the vehicle. See *Storing a Flat or Spare Tire and Tools on page 439*.

To continue changing the flat tire, see *Removing the Flat Tire and Installing the Spare Tire on page 429*.

If the spare tire will not lower, the secondary latch may be engaged causing the tire not to lower. Do the following to check the cable:



1. Check under the vehicle to see if the cable is visible. If it is not visible, see *Secondary Latch System on page 436*.



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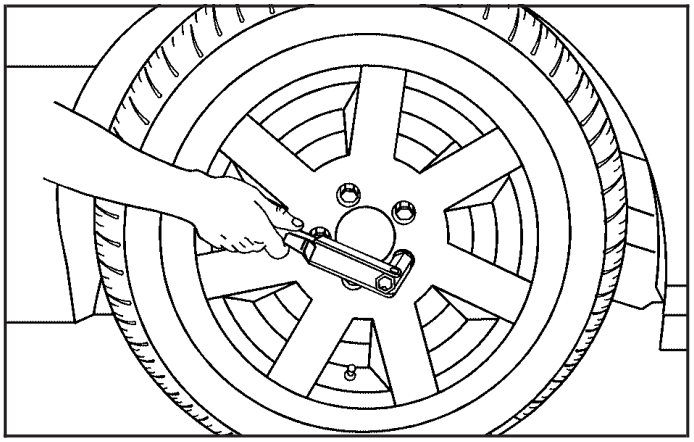
2. If it is visible, first try to tighten the cable by turning the wheel wrench clockwise until you hear two clicks or feel it skip twice. You cannot over-tighten the cable.
3. Loosen the cable then by turning the wrench counterclockwise three or four turns.
4. Tighten the cable all the way and then loosen it at least two times, if the spare tire has not lowered.

   If the spare tire did lower to the ground, continue with Step 4 under *Removing the Spare Tire and Tools on page 426*.

If you still cannot lower the spare tire to the ground, see *Secondary Latch System on page 436*.

## Removing the Flat Tire and Installing the Spare Tire

To remove the flat tire and install the spare, do the following:



1. Loosen the wheel nuts, but do not remove them yet, using the wheel wrench. Turn the handle about 180 degrees, then flip the handle back to the starting position. This avoids taking the wrench off the lug nut for each turn.



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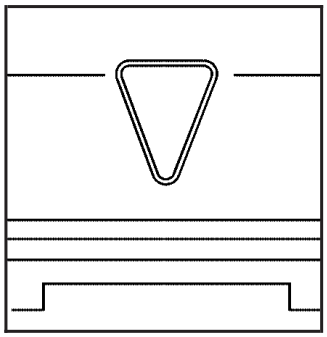

2. Find the jacking location using the hoisting notches located in the plastic molding. The notches in the plastic molding are marked with a triangle shape to help you find them.

3. Attach the wheel wrench to the jack.

**⚠ CAUTION:**

**Getting under a vehicle when it is jacked up is dangerous. If the vehicle slips off the jack you could be badly injured or killed. Never get under a vehicle when it is supported only by a jack.**

**⚠ CAUTION:**

**Raising your vehicle with the jack improperly positioned can damage the vehicle and even make the vehicle fall. To help avoid personal injury and vehicle damage, be sure to fit the jack lift head into the proper location before raising the vehicle.**



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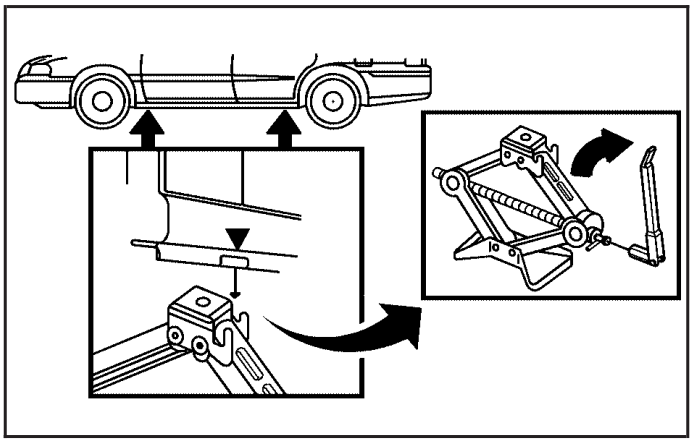
## ⚠ CAUTION:

**Lifting a vehicle and getting under it to do maintenance or repairs is dangerous without the appropriate safety equipment and training. The jack provided with your vehicle is designed only for changing a flat tire. If it is used for anything else, you or others could be badly injured or killed if the vehicle slips off the jack. Use the jack provided with your vehicle only for changing a flat tire.**

4. Turn the wheel wrench clockwise to raise the jack lift head until the jack just fits under the vehicle.



5. Raise the jack by turning the wheel wrench clockwise until the slots in the jack head fit into the metal flange located behind the triangle on the plastic molding as shown.

***Notice:*** **Using a jack to raise the vehicle without positioning it correctly could damage your vehicle. When raising your vehicle on a jack, be sure to position it correctly under the frame and avoid contact with the plastic molding.**



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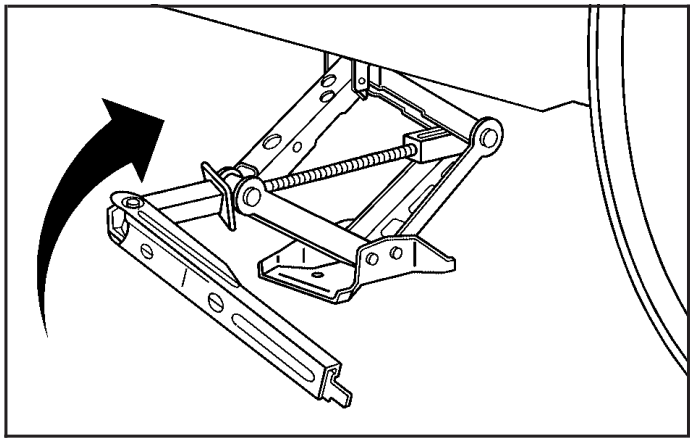
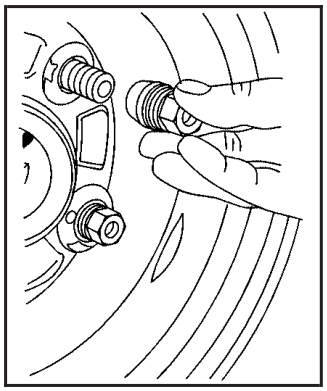
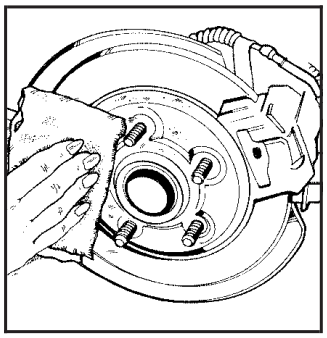
6. Put the compact spare tire near you.



7. Raise the vehicle by turning the wheel wrench clockwise. Raise the vehicle far enough off the ground for the compact spare tire to fit under the vehicle.



8. Remove all the wheel nuts and take off the flat tire.



9. Remove any rust or dirt from the wheel bolts, mounting surfaces and spare wheel.



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**⚠ CAUTION:**

**Rust or dirt on the wheel, or on the parts to which it is fastened, can make the wheel nuts become loose after time. The wheel could come off and cause an accident. When you change a wheel, remove any rust or dirt from the places where the wheel attaches to the vehicle. In an emergency, you can use a cloth or a paper towel to do this; but be sure to use a scraper or wire brush later, if needed, to get all the rust or dirt off.**

**⚠ CAUTION:**

**Never use oil or grease on studs or nuts. If you do, the nuts might come loose. Your wheel could fall off, causing a serious accident.**

10. Install the spare tire.
11. Put the wheel nuts back on with the rounded end of the nuts toward the wheel.
12. Tighten each nut by hand until the wheel is held against the hub.



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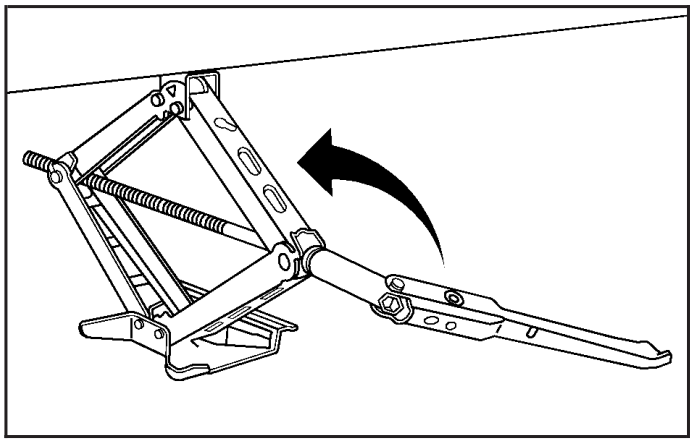
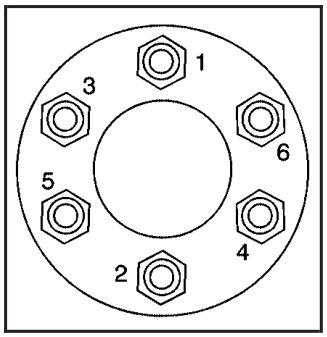


13. Lower the vehicle by attaching the wheel wrench to the jack and turning the wrench counterclockwise. Lower the jack completely.




14. Tighten the wheel nuts firmly in a crisscross sequence, as shown.

Do not try to put a wheel cover on the compact spare tire. It will not fit. Store the wheel cover securely in the rear of the vehicle until you have the flat tire repaired or replaced.



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**⚠ CAUTION:**

**Incorrect wheel nuts or improperly tightened wheel nuts can cause the wheel to come loose and even come off. This could lead to an accident.Be sure to use the correct wheel nuts. If you have to replace them, be sure to get new GM original equipment wheel nuts. Stop somewhere as soon as you can and have the nuts tightened with a torque wrench to the proper torque specification. See *Capacities and Specifications on page 464* for wheel nut torque specification.**

***Notice:*** **Improperly tightened wheel nuts can lead to brake pulsation and rotor damage. To avoid expensive brake repairs, evenly tighten the wheel nuts in the proper sequence and to the proper torque specification.**

***Notice:*** **Wheel covers will not fit on your compact spare. If you try to put a wheel cover on the compact spare, you could damage the cover or the spare.**



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## Secondary Latch System

Your vehicle has an underbody mounted tire hoist assembly equipped with a secondary latch system. It is designed to stop the compact spare tire from suddenly falling off your vehicle if the cable holding the spare tire is damaged. For the secondary latch to work, the tire must be stowed with the valve stem pointing down. See *Storing a Flat or Spare Tire and Tools on page 439* for instructions on storing the spare tire correctly.

**⚠ CAUTION:**

**Before beginning this procedure read all the instructions. Failure to read and follow the instructions could damage the hoist assembly and you and others could get hurt. Read and follow the instructions listed next.**

**⚠ CAUTION:**

**Someone standing too close during the procedure could be injured by the jack. If the spare tire does not slide off the jack completely, make sure no one is behind you or on either side of you as you pull the jack out from the under spare.**



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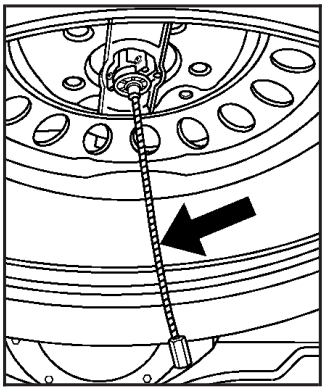
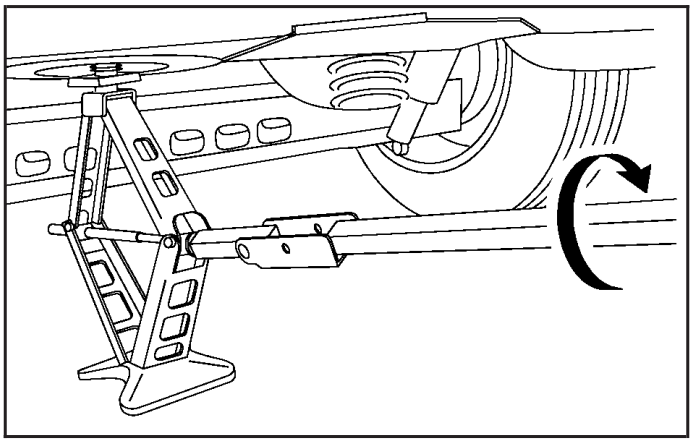
To release the spare tire from the secondary latch, do the following:

1. If the cable is not visible, start this procedure at Step 3.



2. If the cable is visible, place the wrench on the hoist drive nut and turn the wrench counterclockwise until approximately 6 inches (15 cm) of cable is exposed.
3. Attach the wheel wrench to the jack and raise the jack at least 10 turns.
4. Place the jack under the vehicle, ahead of the rear bumper. Position the center lift point of the jack under the center of the spare tire.



5. Turn the wheel wrench clockwise to raise the jack until it lifts the secondary latch spring.
6. Keep raising the jack until the spare tire stops moving upward and is held firmly in place, this lets you know that the secondary latch has released.
7. Lower the jack by turning the wheel wrench counterclockwise. Keep lowering the jack until the spare tire is resting on the wheel wrench.



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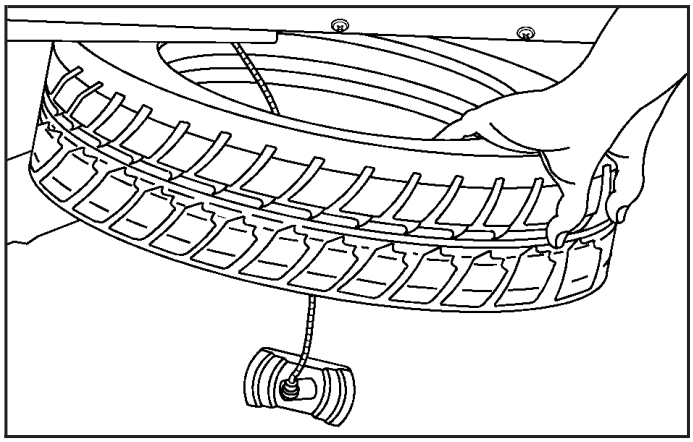
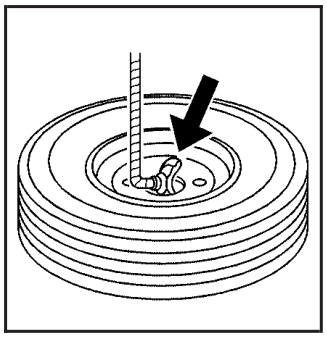


8. Grasp the spare tire with both hands and pull it out from under the vehicle.
9. Reach under the vehicle and remove the wheel wrench and jack.



10. Tilt the retainer and slip it through the wheel opening when the spare tire has been completely lowered.
11. Turn the wrench clockwise to raise the cable back up if the cable is hanging.

Have the hoist assembly inspected as soon as you can. You will not be able to store a spare tire using the hoist assembly until it has been repaired or replaced.



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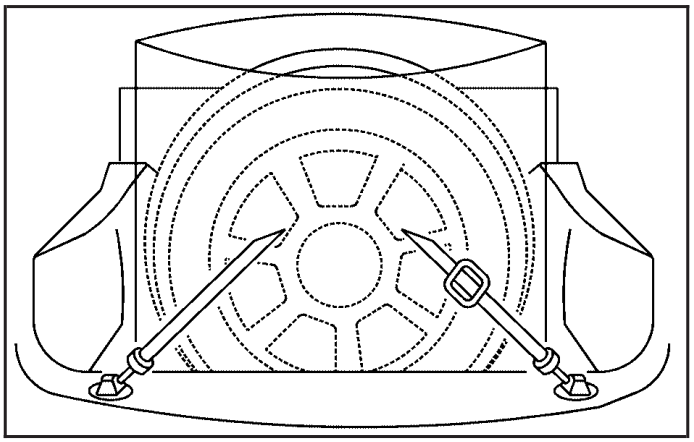
## Storing a Flat or Spare Tire and Tools

**⚠ CAUTION:**

**Storing a jack, a tire, or other equipment in the passenger compartment of the vehicle could cause injury. In a sudden stop or collision, loose equipment could strike someone. Store all these in the proper place.**

### Storing the Flat Tire with Third Row Passengers

1. Put back all tools as they were stored in the rear storage compartment and put the compartment cover back on.
2. Use the power third row seat button, near the liftgate, to tilt the third row seatback forward slightly.



3. Place the flat tire in the tire storage bag and put the tire in an upright position against the third row seat.
4. Route the tie-down strap through the tire as shown in the graphic and attach the strap to the cargo tie-downs in the rear of the vehicle.
5. Tighten the tie-down strap.



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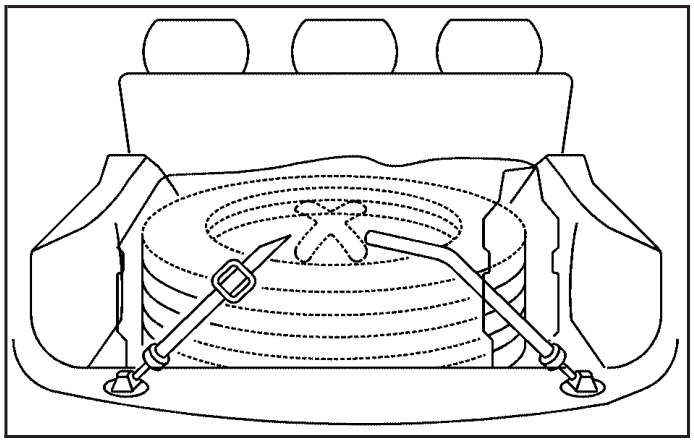
## Storing the Flat Tire with a Flat Load Floor

1. Put back all tools as they were stored in the rear storage compartment and put the compartment cover back on.



2. Place the flat tire in the tire storage bag and put the tire in a horizontal position on the floor in the rear of the vehicle.
3. Route the tie-down strap through the tire as shown in the graphic and attach the strap to the cargo tie-downs in the rear of the vehicle.
4. Tighten the tie-down strap.

## Storing the Spare Tire and Tools

**⚠ CAUTION:**

**The underbody-mounted spare tire needs to be stored with the valve stem pointing down. If the spare tire is stored with the valve stem pointing upwards, its secondary latch will not work properly and the spare tire could loosen and suddenly fall from your vehicle. If this happened when your vehicle was being driven, the tire might contact a person or another vehicle, causing injury and, of course, damage to itself as well. Be sure the underbody-mounted spare tire is stored with its valve stem pointing down.**



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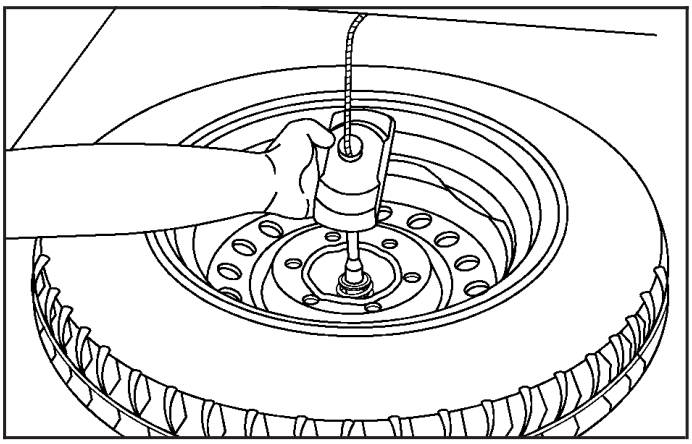
To store the spare tire and tools, do the following:

1. Lay the compact spare tire on the ground at the rear of the vehicle. Position the compact spare tire so that the valve stem is pointed down facing the rear of the vehicle.
2. Lower the cable to the ground. See *Removing the Spare Tire and Tools on page 426*.



3. Tilt the retainer downward and slip it through the center hole of the spare tire.

   Make sure the retainer is fully seated across the underside of the wheel.
4. Attach the wheel wrench to the hoist shaft.
5. Turn the wheel wrench clockwise to lift the spare tire.
6. When the tire is almost in the stored position, turn the tire so that the valve stem is towards the rear of the vehicle.

   This will help when you check and maintain tire pressure in the spare.
7. Raise the tire fully against the underside of the vehicle. Continue turning the wheel wrench until you feel more than two clicks. This indicates that the compact spare tire is secure and the cable is tight. The spare tire hoist cannot be overtightened.



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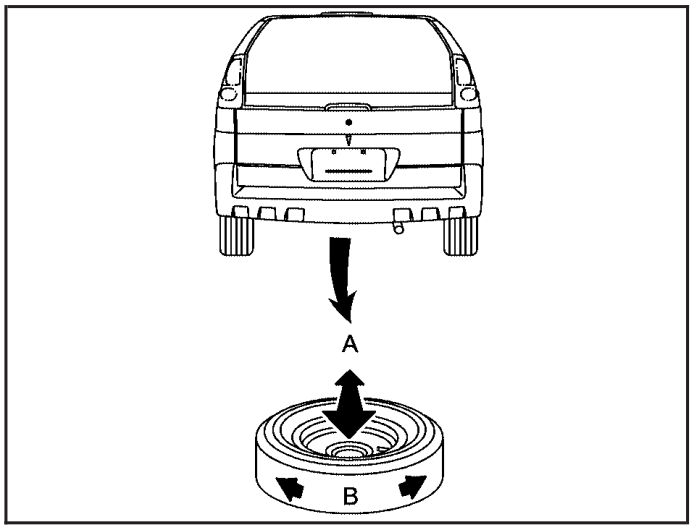


8. Make sure the tire is stored securely. Push, pull (A), and then try to turn the tire (B). If the tire moves, use the wheel wrench to tighten the cable.

Put back all tools as they were stored in the rear storage compartment and put the compartment cover back on.

## Compact Spare Tire

Although the compact spare tire was fully inflated when the vehicle was new, it can lose air after a time. Check the inflation pressure regularly. It should be 60 psi (420 kPa).

After installing the compact spare on the vehicle, you should stop as soon as possible and make sure the spare tire is correctly inflated. The compact spare is made to perform well at speeds up to 65 mph (105 km/h) for distances up to 3,000 miles (5 000 km), so you can finish your trip and have the full-size tire repaired or replaced where you want. You must calibrate the tire inflation monitor system after installing or removing the compact spare. See *Tire Pressure Monitor System on page 410*. The system may not work correctly when the compact spare is installed on the vehicle. Of course, it's best to replace the spare with a full-size tire as soon as you can. The spare will last longer and be in good shape in case you need it again.



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***Notice:*** **When the compact spare is installed, do not take your vehicle through an automatic car wash with guide rails. The compact spare can get caught on the rails. That can damage the tire and wheel, and maybe other parts of your vehicle.**

Do not use the compact spare on other vehicles.

And do not mix the compact spare tire or wheel with other wheels or tires. They will not fit. Keep the spare tire and its wheel together.

***Notice:*** **Tire chains will not fit your compact spare. Using them can damage your vehicle and can damage the chains too. Do not use tire chains on your compact spare.**

# Appearance Care

## Cleaning the Inside of Your Vehicle

Your vehicle's interior will continue to look its best if it is cleaned often. Although not always visible, dust and dirt can accumulate on your upholstery. Dirt can damage carpet, fabric, leather, and plastic surfaces. Regular vacuuming is recommended to remove particles from your upholstery.

It is important to keep your upholstery from becoming and remaining heavily soiled. Soils should be removed as quickly as possible. Your vehicle's interior may experience extremes of heat that could cause stains to set rapidly.

Lighter colored interiors may require more frequent cleaning. Use care because newspapers and garments that transfer color to your home furnishings may also transfer color to your vehicle's interior.

When cleaning your vehicle's interior, only use cleaners specifically designed for the surfaces being cleaned. Permanent damage may result from using cleaners on surfaces for which they were not intended. Use glass cleaner only on glass. Remove any accidental over-spray from other surfaces immediately. To prevent over-spray, apply cleaner directly to the cleaning cloth.

***Notice:*** **If you use abrasive cleaners when cleaning glass surfaces on your vehicle, you could scratch the glass and/or cause damage to the integrated radio antenna and the rear window defogger. When cleaning the glass on your vehicle, use only a soft cloth and glass cleaner.**



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Many cleaners contain solvents that may become concentrated in your vehicle's breathing space. Before using cleaners, read and adhere to all safety instructions on the label. While cleaning your vehicle's interior, maintain adequate ventilation by opening your vehicle's doors and windows.

Dust may be removed from small buttons and knobs using a small brush with soft bristles.

Your dealer has a product for cleaning your vehicle's glass. Should it become necessary, you can also obtain a product from your dealer to remove odors from your vehicle's upholstery.

Do not clean your vehicle using the following cleaners or techniques:

- Never use a knife or any other sharp object to remove a soil from any interior surface.
- Never use a stiff brush. It can cause damage to your vehicle's interior surfaces.
- Neverapply heavy pressure or rub aggressively with a cleaning cloth. Use of heavy pressure can damage your interior and does not improve the effectiveness of soil removal.
- Use only mild, neutral-pH soaps. Avoid laundry detergents or dishwashing soaps with degreasers. Using too much soap will leave a residue that leaves streaks and attracts dirt. For liquid cleaners, about 20 drops per gallon (3.78 L) of water is a good guide.
- Do not heavily saturate your upholstery while cleaning.
- Damage to your vehicle's interior may result from the use of many organic solvents such as naptha, alcohol, etc.



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## Fabric/Carpet

Use a vacuum cleaner with a soft brush attachment frequently to remove dust and loose dirt. A canister vacuum with a beater bar in the nozzle may only be used on floor carpet and carpeted floor mats. For soils, always try to remove them first with plain water or club soda. Before cleaning, gently remove as much of the soil as possible using one of the following techniques:

- For liquids: gently blot the remaining soil with a paper towel. Allow the soil to absorb into the paper towel until no more can be removed.
- For solid dry soils: remove as much as possible and then vacuum.

To clean, use the following instructions:

1. Saturate a lint-free, clean white cloth with water or club soda.
2. Wring the cloth to remove excess moisture.
3. Start on the outside edge of the soil and gently rub toward the center. Continue cleaning, using a clean area of the cloth each time it becomes soiled.
4. Continue to gently rub the soiled area until the cleaning cloth remains clean.
5. If the soil is not completely removed, use a mild soap solution and repeat the cleaning process that was used with plain water.

If any of the soil remains, a commercial fabric cleaner or spot lifter may be necessary. When a commercial upholstery cleaner or spot lifter is to be used, test a small hidden area for colorfastness first. If the locally cleaned area gives any impression that a ring formation may result, clean the entire surface.

After the cleaning process has been completed, a paper towel can be used to blot excess moisture from the fabric or carpet.



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## Leather

A soft cloth dampened with water may be used to remove dust. If a more thorough cleaning is necessary, a soft cloth dampened with a mild soap solution can be used. Allow the leather to dry naturally. Do not use heat to dry. Never use steam to clean leather. Never use spot lifters or spot removers on leather. Many commercial leather cleaners and coatings that are sold to preserve and protect leather may permanently change the appearance and feel of your leather and are not recommended. Do not use silicone or wax-based products, or those containing organic solvents to clean your vehicle's interior because they can alter the appearance by increasing the gloss in a non-uniform manner. Never use shoe polish on your leather.

## Instrument Panel, Vinyl, and Other Plastic Surfaces

A soft cloth dampened with water may be used to remove dust. If a more thorough cleaning is necessary, a clean soft cloth dampened with a mild soap solution can be used to gently remove dust and dirt. Never use spot lifters or removers on plastic surfaces. Many commercial cleaners and coatings that are sold to preserve and protect soft plastic surfaces may permanently change the appearance and feel of your interior and are not recommended. Do not use silicone or wax-based products, or those containing organic solvents to clean your vehicle's interior because they can alter the appearance by increasing the gloss in a non-uniform manner.

Some commercial products may increase gloss on your instrument panel. The increase in gloss may cause annoying reflections in the windshield and even make it difficult to see through the windshield under certain conditions.



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## Wood Panels

Use a clean cloth moistened in warm, soapy water (use mild dish washing soap). Dry the wood immediately with a clean cloth.

## Speaker Covers

Vacuum around a speaker cover gently, so that the speaker will not be damaged. Clean spots with just water and mild soap.

## Care of Safety Belts

Keep belts clean and dry.

**⚠ CAUTION:**

**Do not bleach or dye safety belts. If you do, it may severely weaken them. In a crash, they might not be able to provide adequate protection. Clean safety belts only with mild soap and lukewarm water.**

## Weatherstrips

Silicone grease on weatherstrips will make them last longer, seal better, and not stick or squeak. Apply silicone grease with a clean cloth. During very cold, damp weather frequent application may be required. See *Recommended Fluids and Lubricants on page 480*.

## Washing Your Vehicle

The paint finish on the vehicle provides beauty, depth of color, gloss retention, and durability.

The best way to preserve the vehicle's finish is to keep it clean by washing it often with lukewarm or cold water.

Do not wash the vehicle in the direct rays of the sun. Use a car washing soap. Do not use strong soaps or chemical detergents. Be sure to rinse the vehicle well, removing all soap residue completely. Approved cleaning products can be obtained from your dealer. See *Vehicle Care/Appearance Materials on page 452*. Do not use cleaning agents that are petroleum based, or that contain acid or abrasives.



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All cleaning agents should be flushed promptly and not allowed to dry on the surface, or they could stain. Dry the finish with a soft, clean chamois or an all-cotton towel to avoid surface scratches and water spotting.

High pressure car washes may cause water to enter the vehicle.

## Cleaning Exterior Lamps/Lenses

Use only lukewarm or cold water, a soft cloth and a car washing soap to clean exterior lamps and lenses. Follow instructions under *Washing Your Vehicle on page 447*.

## Finish Care

Occasional waxing or mild polishing of the vehicle by hand may be necessary to remove residue from the paint finish. Approved cleaning products can be obtained from your dealer. See *Vehicle Care/Appearance Materials on page 452*.

***Notice:*** **Machine compounding or aggressive polishing on a basecoat/clearcoat paint finish may damage it. Use only non-abrasive waxes and polishes that are made for a basecoat/clearcoat paint finish on your vehicle.**

The vehicle has a basecoat/clearcoat paint finish. The clearcoat gives more depth and gloss to the colored basecoat. Always use waxes and polishes that are non-abrasive and made for a basecoat/clearcoat paint finish.

Foreign materials such as calcium chloride and other salts, ice melting agents, road oil and tar, tree sap, bird droppings, chemicals from industrial chimneys, etc., can damage the vehicle's finish if they remain on painted surfaces. Wash the vehicle as soon as possible. If necessary, use non-abrasive cleaners that are marked safe for painted surfaces to remove foreign matter.

Exterior painted surfaces are subject to aging, weather, and chemical fallout that can take their toll over a period of years. To help keep the paint finish looking new, keep the vehicle in a garage or covered whenever possible.



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## Windshield and Wiper Blades

If the windshield is not clear after using the windshield washer, or if the wiper blade chatters when running, wax, sap, or other material may be on the blade or windshield.

Clean the outside of the windshield with a glass cleaning liquid or powder and water solution. The windshield is clean if beads do not form when it is rinsed with water.

Grime from the windshield will stick to the wiper blades and affect their performance. Clean the blade by wiping vigorously with a cloth soaked in full-strength windshield washer solvent. Then rinse the blade with water.

Check the wiper blades and clean them as necessary; replace blades that look worn.

## Aluminum or Chrome-Plated Wheels

Your vehicle may have either aluminum or chrome-plated wheels.

Keep the wheels clean using a soft clean cloth with mild soap and water. Rinse with clean water. After rinsing thoroughly, dry with a soft clean towel. A wax may then be applied.

***Notice:*** **If you use strong soaps, chemicals, abrasive polishes, cleaners, brushes, or cleaners that contain acid on aluminum or chrome-plated wheels, you could damage the surface of the wheel(s). The repairs would not be covered by your warranty. Use only GM-approved cleaners on aluminum or chrome-plated wheels.**

The surface of these wheels is similar to the painted surface of your vehicle. Do not use strong soaps, chemicals, abrasive polishes, abrasive cleaners, cleaners with acid, or abrasive cleaning brushes on them because you could damage the surface. Do not use chrome polish on aluminum wheels.



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***Notice:*** **Using chrome polish on aluminum wheels could damage the wheels. The repairs would not be covered by your warranty. Use chrome polish on chrome wheels only.**

Use chrome polish only on chrome-plated wheels, but avoid any painted surface of the wheel, and buff off immediately after application.

***Notice:*** **If you drive your vehicle through an automatic car wash that has silicone carbide tire cleaning brushes, you could damage the aluminum or chrome-plated wheels. The repairs would not be covered by your warranty. Never drive a vehicle equipped with aluminum or chrome-plated wheels through an automatic car wash that uses silicone carbide tire cleaning brushes.**

Do not take your vehicle through an automatic car wash that has silicone carbide tire cleaning brushes. These brushes can also damage the surface of these wheels.

## Tires

To clean the tires, use a stiff brush with tire cleaner.

***Notice:*** **Using petroleum-based tire dressing products on your vehicle may damage the paint finish and/or tires. When applying a tire dressing, always wipe off any overspray from all painted surfaces on your vehicle.**

## Sheet Metal Damage

If the vehicle is damaged and requires sheet metal repair or replacement, make sure the body repair shop applies anti-corrosion material to parts repaired or replaced to restore corrosion protection.

Original manufacturer replacement parts will provide the corrosion protection while maintaining the warranty.



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## Finish Damage

Any stone chips, fractures or deep scratches in the finish should be repaired right away. Bare metal will corrode quickly and may develop into major repair expense.

Minor chips and scratches can be repaired with touch-up materials available from your dealer. Larger areas of finish damage can be corrected in your dealer's body and paint shop.

## Underbody Maintenance

Chemicals used for ice and snow removal and dust control can collect on the underbody. If these are not removed, corrosion and rust can develop on the underbody parts such as fuel lines, frame, floor pan, and exhaust system even though they have corrosion protection.

At least every spring, flush these materials from the underbody with plain water. Clean any areas where mud and debris can collect. Dirt packed in close areas of the frame should be loosened before being flushed. Your dealer or an underbody car washing system can do this for you.

## Chemical Paint Spotting

Some weather and atmospheric conditions can create a chemical fallout. Airborne pollutants can fall upon and attack painted surfaces on the vehicle. This damage can take two forms: blotchy, ring-shaped discolorations, and small, irregular dark spots etched into the paint surface.

Although no defect in the paint job causes this, GM will repair, at no charge to the owner, the surfaces of new vehicles damaged by this fallout condition within 12 months or 12,000 miles (20 000 km) of purchase, whichever occurs first.



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## Vehicle Care/Appearance Materials

| Description | Usage |
|---|---|
| Polishing Cloth Wax-Treated | Interior and exterior polishing cloth. |
| Tar and Road Oil Remover | Removes tar, road oil, and asphalt. |
| Chrome Cleaner and Polish | Use on chrome or stainless steel. |
| White Sidewall Tire Cleaner | Removes soil and black marks from whitewalls. |
| Vinyl Cleaner | Cleans vinyl. |
| Glass Cleaner | Removes dirt, grime, smoke and fingerprints. |
| Chrome and Wire Wheel Cleaner | Removes dirt and grime from chrome wheels and wire wheel covers. |
| Finish Enhancer | Removes dust, fingerprints, and surface contaminants. Spray on and wipe off. |
| Swirl Remover Polish | Removes swirl marks, fine scratches, and other light surface contamination. |
| Cleaner Wax | Removes light scratches and protects finish. |
| Foaming Tire Shine Low Gloss | Cleans, shines, and protects in one step. No wiping necessary. |
| Wash Wax Concentrate | Medium foaming shampoo. Cleans and lightly waxes. Biodegradable and phosphate free. |
| Spot Lifter | Quickly removes spots and stains from carpets, vinyl, and cloth upholstery. |
| Odor Eliminator | Odorless spray odor eliminator used on fabrics, vinyl, leather and carpet. |



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# Vehicle Identification

## Vehicle Identification Number (VIN)

This is the legal identifier for your vehicle. It appears on a plate in the front corner of the instrument panel, on the driver side. You can see it if you look through the windshield from outside your vehicle. The VIN also appears on the Vehicle Certification and Service Parts labels and the certificates of title and registration.

### Engine Identification

The eighth character in the VIN is the engine code. This code helps you identify your vehicle's engine, specifications, and replacement parts.

## Service Parts Identification Label

This labelis in the passenger side rear storage compartment or at the lower edge of the liftgate. It is very helpful if you ever need to order parts. The label has the following information:

- Vehicle Identification Number (VIN)
- Model designation
- Paint information
- Production options and special equipment

Do not remove this label from the vehicle.



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# Electrical System

## Add-On Electrical Equipment

***Notice:*** **Do not add anything electrical to your vehicle unless you check with your dealer first. Some electrical equipment can damage your vehicle and the damage would not be covered by your warranty. Some add-on electrical equipment can keep other components from working as they should.**

Add-on equipment can drain your vehicle's battery, even if your vehicle is not operating.

Your vehicle has an airbag system. Before attempting to add anything electrical to your vehicle, see *Servicing Your Airbag-Equipped Vehicle on page 87*.

## Windshield Wiper Fuses

The windshield wiper motor is protected by an internal circuit breaker. If the wiper motor overheats due to heavy snow, the wipers will stop until the motor cools and will then restart.

## Power Windows and Other Power Options

Circuit breakers protect the power windows and power seats. When the current load is too heavy, the circuit breaker opens and closes, protecting the circuit until the problem is fixed or goes away.



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## Fuses and Circuit Breakers

The wiring circuits in your vehicle are protected from short circuits by a combination of fuses and circuit breakers. This greatly reduces the chance of fires caused by electrical problems.

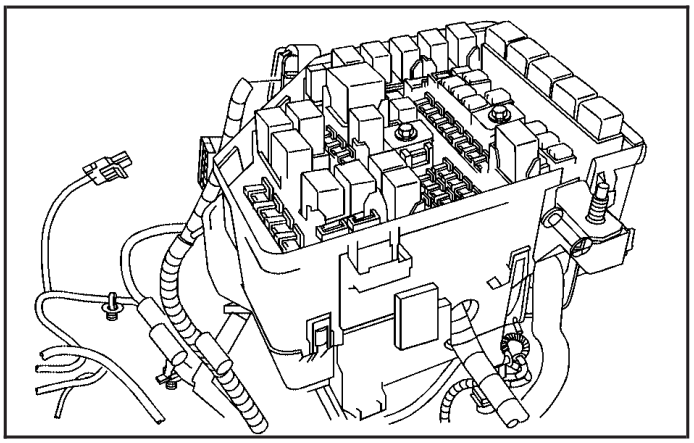
Look at the silver-colored band inside the fuse. If the band is broken or melted, replace the fuse. Be sure you replace a bad fuse with a new one of the identical size and rating. If a fuse blows, see your dealer for service immediately.

If you ever have a problem on the road and don't have a spare fuse, you can "borrow" one that has the same amperage. Pick some feature of your vehicle that you can get along without – like the radio or cigarette lighter – and use its fuse, if it is the correct amperage. Replace it as soon as you can.

The fuses are located in three fuse blocks, one located in the engine compartment on the passenger's side and the other two under the rear seat.

## Underhood Fuse Block

The underhood fuse block is located in the engine compartment on the right side of the vehicle. See *Engine Compartment Overview on page 356* for more information on location.



To access the fuses, push in the two tabs located on each side of the fuse block cover. Then lift the cover off.



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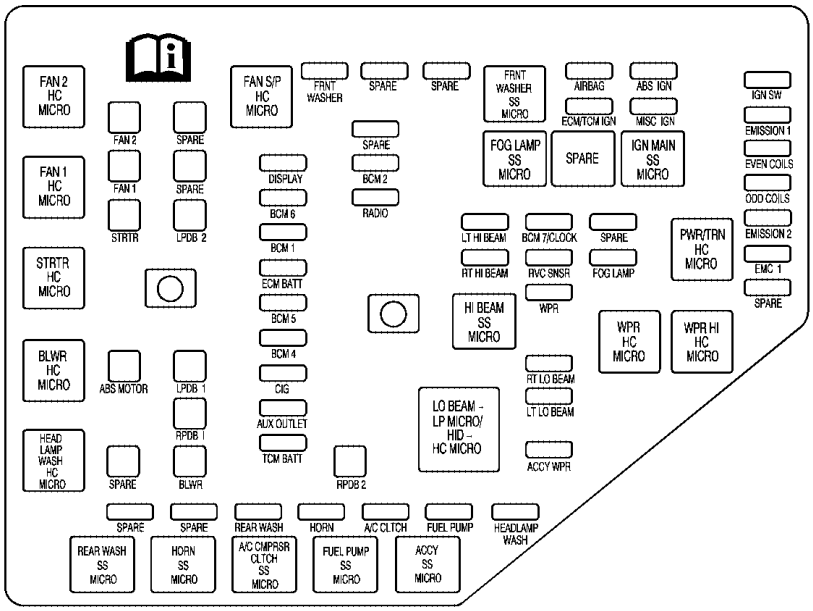


| Relays | Usage |
|---|---|
| FAN 2 HC MICRO | Right Side Engine Cooling Fan Motors |
| FAN S/P HC MICRO | Series/Parallel Engine Cooling Fan |

| Relays | Usage |
|---|---|
| FRNT WASHER SS MICRO | Front Washer Pump |
| FAN 1 HC MICRO | Left Side Engine Cooling Fan Motors |



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| Relays | Usage |
|---|---|
| FOG LAMP SS MICRO | Front Fog Lamps |
| SPARE | Spare |
| IGN MAIN SS MICRO | Ignition Switch (ON) |
| STRTR HC MICRO | Starter Solenoid |
| PWR/TRN HC MICRO | Powertrain/Engine Control Module |
| HI BEAM SS MICRO | High-Beam Headlamps |
| BLWR HC MICRO | Front Blower Motor Assembly |
| WPR HC MICRO | Windshield Wiper System - On/Off |
| WPR HI HC MICRO | Windshield Wiper System - Low/High |
| HEAD LAMP WASH HC MICRO | Headlamp Washer Pump (Option) |
| LO BEAM-LP MICRO/HID-HC MICRO | Low-Beam Headlamps |
| REAR WASH SS MICRO | Rear Washer Pump |

| Relays | Usage |
|---|---|
| HORN SS MICRO | Horn |
| A/C CMPRSR CLTCH SS MICRO | Air Conditioning Compressor Clutch |
| FUEL PUMP SS MICRO | Fuel Pump |
| ACCY SS MICRO | Accessory Power (Rear Wipers, Inside Rearview Mirror) |

| J Case Fuses | Usage |
|---|---|
| FAN 2 | Right Cooling Fan Motor |
| SPARE | Spare |
| FAN 1 | Left Cooling Fan Motor |
| SPARE | Spare |
| STRTR | Starter Solenoid |
| LPDB 2 | LRPDB (Left Side Rear Power Distribution Box) |
| ABS MOTOR | Anti-lock Brake System Module |
| LPDB 1 | LRPDB (Left Side Rear Power Distribution Box) |
| RPDB 1 | RRPDB (Right Side Rear Power Distribution Box) |
| SPARE | Spare |



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| J Case Fuses | Usage |
|---|---|
| BLWR | Front Blower Motor Assembly |
| RPDB 2 | RRPDB (Right Side Rear Power Distribution Box) |

| Mini Fuses | Usage |
|---|---|
| FRNT WASHER | Front Washer Pump |
| SPARE | Spare |
| SPARE | Spare |
| AIRBAG | Sensing Diagnostic Module (SDM), Occupant Sensor Display, Instrument Cluster |
| ABS IGN | Anti-lock Braking System Ignition, Variable Effort Steering |
| IGN SW | Ignition Switch, Immobilizer Module |
| ECM/TCM IGN | Engine Control Module/Transmission Control Module Ignition Power |
| MISC IGN | Air Quality Sensor |
| EMISSION 1 | Pre 02 Sensors, Cam Phasor (V6), Canister Purge (V6), Intake Manifold Tuning Valve (V6) |
| SPARE | Spare |

| Mini Fuses | Usage |
|---|---|
| DISPLAY | Instrument Panel Cluster, Climate Control Module, Front Blower Relay, Diagnostic Link Connector |
| BCM 2 | LED Instrument Panel Dimming, Overhead Lamps, Vanity Lamps |
| EVEN COILS | Even Ignition Coils, Even Fuel Injectors |
| BCM 6 | Right Side Rear Stoplamp, Turn Lamps, Key Capture Solenoid |
| RADIO | Radio |
| ODD COILS | Odd Ignition Coils, Odd Fuel Injectors |
| BCM 1 | Body Control Module (BCM) Power |
| LT HI BEAM | Left Side High-Beam Headlamp |
| BCM 7/CLOCK | Switch Dimming, Analog Clock |
| SPARE | Spare |
| EMISSION 2 | Cooling Fan Relays, Air Conditioning Clutch Relay, Post O2 Sensors, Mass Airflow Sensor, Canister Purge (V8) |
| ECM BATT | Engine Control Module (ECM) |



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| Mini Fuses | Usage |
|---|---|
| RT HI BEAM | Right Side High-Beam Headlamp |
| RVC SNSR | Battery Regulated Voltage Control Sense |
| FOG LAMP | Front Fog Lamps |
| ECM 1 | Engine Control Module (ECM) |
| BCM 5 | Left Side Front Turn Lamps, Rear Stoplamps, Turn Lamps |
| WPR | Windshield Wiper Motor |
| SPARE | Spare |
| BCM 4 | Center High-Mounted Stoplamp (CHMSL), Back-up Lamps |
| CIG | Instrument Panel Accessory Power Outlet (Cigarette Lighter) |
| RT LO BEAM | Right Side Low-Beam Headlamp |
| AUX OUTLET | Center Console Accessory Power Outlet |

| Mini Fuses | Usage |
|---|---|
| LT LO BEAM | Left Side Low-Beam Headlamp |
| TCM BATT | Transmission Control Module (TCM) |
| ACCY WPR | Rear Wiper Motor & Switch, Inside Rearview Mirror |
| SPARE | Spare |
| SPARE | Spare |
| REAR WASH | Rear Washer Pump |
| HORN | Horn Assembly |
| A/C CLTCH | Air Conditioning Compressor Clutch |
| FUEL PUMP | Fuel Pump |

| Circuit Breaker | Usage |
|---|---|
| HEADLAMP WASH | Headlamp Washer Pump (Optional) |



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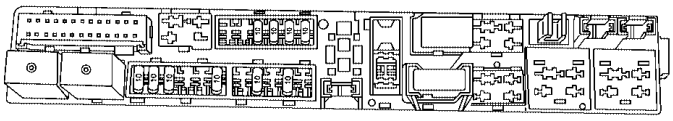
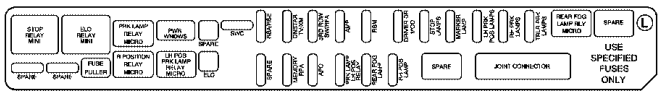
## Rear Underseat Fuse Block (Left Side)

The left side rear fuse block is located under the rear seat on the left side of the vehicle. The carpet must be lifted up to access the rear fuse block.



To access the fuse block, push in the two tabs located at each end of the fuse block cover. Then lift the cover off.




| Relays | Usage |
|---|---|
| STOP RELAY MINI | Not Used |
| ELC RELAY MINI | Electronic Level Control (ELC) Compressor Motor |
| PRK LAMP RELAY MICRO | License Lamps |
| REAR FOG LAMP RLY MICRO | Not Used |
| SPARE | Spare |
| R POSITION RELAY MICRO | Not Used |
| LH POS PRK LAMP RELAY MICRO | Front & Rear Park Lamps |
| SPARE | Not Used |

| Mini Fuses | Usage |
|---|---|
| SWC | Steering Wheel Controls |
| RSA/RSE | Rear Seat Entertainment, Rear Seat Audio |
| ONSTAR TV/XM | OnStar® Module, XM Radio |
| 3RD ROW SW/RFA | Flip Fold Seat Switches, Remote Keyless Entry System Module |
| AMP | Audio Amplifier |



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| Mini Fuses | Usage |
|---|---|
| RSM | Rear Seat Module, Flip/Fold Motors |
| DRIVER DR MOD | Driver Door Module (Locks, Outside Rearview Mirror, Window Switches) |
| STOP LAMPS | Not Used |
| MARKER LAMP | License Lamps |
| LH PRK POS LAMPS | Left Side Taillamp, Left Side Front Park Lamps, Sidemarker Lamps |
| RH PRK LAMPS | Right Side Taillamp, Right Side Front Park Lamps, Sidemarker Lamps |
| TRLR PRK LAMPS | Trailer Park Lamps |
| SPARE | Spare |
| SPARE | Spare |
| SPARE | Spare |
| MEMORY RPA | Memory Seat Module, Ultrasonic Rear Parking Assist (URPA) Module |
| APO | Rear Auxiliary Power Outlet |
| PRK LAMP LH POS | Park Lamp Relay |
| REAR FOG LAMP | Not Used |
| RH POS LAMP | Right Side Taillamp |

| J Case Fuses | Usage |
|---|---|
| SPARE | Spare |
| ELC | Electronic Level Control (ELC) Compressor |

| Circuit Breakers | Usage |
|---|---|
| PWR WNDWS | Power Window Motors |

| Misc. | Usage |
|---|---|
| FUSE PULLER | Fuse Puller |
| JOINT CONNECTOR | Joint Connector |



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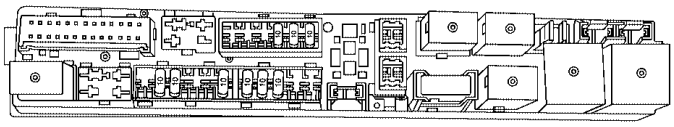
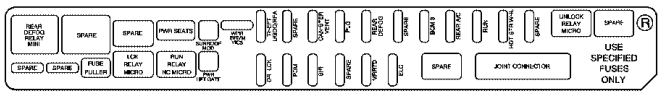
## Rear Underseat Fuse Block (Right Side)

The right side rear fuse block is located under the rear seat on the right side of the vehicle. The carpet must be lifted up to access the rear fuse block.



To access the fuse block, push in the two tabs located at each end of the fuse block cover. Then lift the cover off.




| Relays | Usage |
|---|---|
| REAR DEFOG RELAY MINI | Rear Window Defogger |
| SPARE | Spare |
| SPARE | Spare |
| UNLOCK RELAY MICRO | Rear Door Locks |
| SPARE | Spare |
| LCK RELAY MICRO | Rear Door Locks |
| RUN RELAY HC MICRO | Rear Air Conditioning Blower Motor, Climate Control Ignition |
| SPARE | Spare |

| Mini Fuses | Usage |
|---|---|
| WPR ISRVM VICS | Rear Wiper Switch, Inside Rearview Mirror |
| THEFT UGDO/RFA | Garage Door Opener, Keyless Entry System |
| SPARE | Spare |
| CANISTER VENT | Canister Vent Solenoid |
| PLG | Power Liftgate Module |



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| Mini Fuses | Usage |
|---|---|
| REAR DEFOG | Rear Window Defogger |
| SPARE | Spare |
| BCM 3 | Hush Panel Lamps, Overhead Courtesy Lamp Assembly, Right Side Front Turn Lamp |
| REAR A/C | Rear Air Conditioning System |
| RUN | Climate Control Module |
| HDT STR WHL | Not Used |
| SPARE | Spare |
| SPARE | Spare |
| SPARE | Spare |
| DR LCK | Rear Door Locks |
| PDM | Passenger Door Module (Locks, Outside Mirror, Window Switches) |
| SIR | Sensing Diagnostic Module (SDM), Occupant Sensor, Roll-over Sensor |
| SPARE | Spare |
| MRRTD | Suspension Module |
| ELC | Electronic Leveling Compressor (ELC) Exhaust Solenoid, ELC Relay |

| J Case Fuses | Usage |
|---|---|
| SUNROOF MOD | Power Sunroof Module |
| PWR LIFT GATE | Power Liftgate Motors |

| Circuit Breakers | Usage |
|---|---|
| PWR SEATS | Power Seat Motors |

| Misc. | Usage |
|---|---|
| FUSE PULLER | Fuse Puller |
| JOINT CONNECTOR | Joint Connector |



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# Capacities and Specifications

The following approximate capacities are given in English and metric conversions. See *Recommended Fluids and Lubricants on page 480* for more information.

| Application | Capacities | |
|---|---|---|
| | English | Metric |
| Air Conditioning Refrigerant | For the air conditioning system refrigerant charge amount, see the refrigerant caution label located under the hood. See your dealer for more information. | |
| Automatic Transmission (Pan Removal and Replacement) | | |
| 5-Speed Automatic | 7.4 qt | 7.0 L |
| 6-Speed Automatic | 7.3 qt | 6.9 L |
| Cooling System | | |
| 3.6L V6 | 11.7 qt | 11.1 L |
| 4.6L V8 | 12.5 qt | 11.8 L |
| Engine Oil with Filter | | |
| 3.6L V6 | 6.0 qt | 5.7 L |
| 4.6L V8 | 8.0 qt | 7.6 L |



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| Application | Capacities | |
|---|---|---|
| | English | Metric |
| Fuel Tank | 20.0 gal | 75.7 L |
| Wheel Nut Torque | 100 lb ft | 140 N•m |
| All capacities are approximate. When adding, be sure to fill to the approximate level, as recommended in this manual. Recheck fluid level after filling. | | |

## Engine Specifications

| Engine | VIN Code | Transmission | Spark Plug Gap |
|---|---|---|---|
| 3.6L V6 | 7 | Automatic | 0.044 inches (1.1 mm) |
| 4.6L V8 | A | Automatic | 0.050 inches (1.27 mm) |



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## NOTES



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# Section 6 Maintenance Schedule

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# Maintenance Schedule

## Introduction

**Important: Keep engine oil at the proper level and change as recommended.**

*Have you purchased the GM Protection Plan? The Plan supplements your new vehicle warranties. See your Warranty and Owner Assistance booklet or your dealer for details.*

## Maintenance Requirements

***Notice:*** **Maintenance intervals, checks, inspections, replacement parts, and recommended fluids and lubricants as prescribed in this manual are necessary to keep your vehicle in good working condition. Any damage caused by failure to follow scheduled maintenance might not be covered by warranty.**

## Your Vehicle and the Environment

Proper vehicle maintenance not only helps to keep your vehicle in good working condition, but also helps the environment. All recommended maintenance is important. Improper vehicle maintenance can even affect the quality of the air we breathe. Improper fluid levels or the wrong tire inflation can increase the level of emissions from your vehicle. To help protect our environment, and to keep your vehicle in good condition, be sure to maintain your vehicle properly.



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## Using the Maintenance Schedule

We at General Motors want to help you keep your vehicle in good working condition. But we do not know exactly how you will drive it. You may drive very short distances only a few times a week. Or you may drive long distances all the time in very hot, dusty weather. You may use your vehicle in making deliveries. Or you may drive it to work, to do errands, or in many other ways.

Because of all the different ways people use their vehicles, maintenance needs vary. You may need more frequent checks and replacements. So please read the following and note how you drive. If you have any questions on how to keep your vehicle in good condition, see your GM Goodwrench® dealer.

This schedule is for vehicles that:

- carry passengers and cargo within recommended limits. You will find these limits on the Tire and Loading Information label. See *Loading Your Vehicle on page 322*.
- are driven on reasonable road surfaces within legal driving limits.
- are driven off-road in the recommended manner. See *Off-Road Driving on page 291*.
- use the recommended fuel. See *Gasoline Octane on page 349*.



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The services in *Scheduled Maintenance on page 471* should be performed when indicated. See *Additional Required Services on page 473* and *Maintenance Footnotes on page 474* for further information.

**⚠ CAUTION:**

**Performing maintenance work on a vehicle can be dangerous. In trying to do some jobs, you can be seriously injured. Do your own maintenance work only if you have the required know-how and the proper tools and equipment for the job. If you have any doubt, see your GM Goodwrench® dealer to have a qualified technician do the work. See *Doing Your Own Service Work on page 348*.**

Some maintenance services can be complex. So, unless you are technically qualified and have the necessary equipment, you should have your GM Goodwrench® dealer do these jobs.

When you go to your GM Goodwrench® dealer for your service needs, you will know that GM-trained and supported service technicians will perform the work using genuine GM parts.

If you want to purchase service information, see *Service Publications Ordering Information on page 505*.

*Owner Checks and Services on page 476* tells you what should be checked, when to check it, and what you can easily do to help keep your vehicle in good condition.

The proper replacement parts, fluids, and lubricants to use are listed in *Recommended Fluids and Lubricants on page 480* and *Normal Maintenance Replacement Parts on page 482*. When your vehicle is serviced, make sure these are used. All parts should be replaced and all necessary repairs done before you or anyone else drives the vehicle. We recommend the use of genuine GM parts.



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## Scheduled Maintenance

When the CHANGE ENGINE OIL SOON message comes on, it means that service is required for your vehicle. Have your vehicle serviced as soon as possible within the next 600 miles (1 000 km). It is possible that, if you are driving under the best conditions, the engine oil life system may not indicate that vehicle service is necessary for over a year. However, the engine oil and filter must be changed at least once a year and at this time the system must be reset. Your GM Goodwrench® dealer has GM-trained service technicians who will perform this work using genuine GM parts and reset the system.

If the engine oil life system is ever reset accidentally, you must service your vehicle within 3,000 miles (5 000 km) since your last service. Remember to reset the oil life system whenever the oil is changed. See *Engine Oil Life System on page 363* for information on the Engine Oil Life System and resetting the system.

When the CHANGE ENGINE OIL SOON message appears, certain services, checks, and inspections are required. Required services are described in the following for "Maintenance I" and "Maintenance II." Generally, it is recommended that your first service be Maintenance I, your second service be Maintenance II, and that you alternate Maintenance I and Maintenance II thereafter. However, in some cases, Maintenance II may be required more often.

**Maintenance I** — Use Maintenance I if the CHANGE ENGINE OIL SOON message comes on within 10 months since the vehicle was purchased or Maintenance II was performed.

**Maintenance II** — Use Maintenance II if the previous service performed was Maintenance I. Always use Maintenance II whenever the message comes on 10 months or more since the last service or if the message has not come on at all for one year.



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## Scheduled Maintenance

| Service | Maintenance I | Maintenance II |
|---|---|---|
| Change engine oil and filter. See *Engine Oil on page 360*. Reset oil life system. See *Engine Oil Life System on page 363*. *An Emission Control Service.* | • | • |
| Lubricate chassis components. *See footnote #.* | • | • |
| Visually check for any leaks or damage. *See footnote (g).* | • | • |
| Inspect engine air cleaner filter. If necessary, replace filter. See *Engine Air Cleaner/Filter on page 365*. *See footnote (k).* | | • |
| Check tires for inflation pressures and wear. See *Tires on page 398*. | • | • |
| Inspect brake system. *See footnote (a).* | • | • |
| Check engine coolant and windshield washer fluid levels and add fluid as needed. | • | • |
| Perform any needed additional services. See “Additional Required Services” in this section. | • | • |
| Inspect suspension and steering components. *See footnote (b).* | | • |
| Inspect engine cooling system. *See footnote (c).* | | • |
| Inspect wiper blades. *See footnote (d).* | | • |
| Inspect restraint system components. *See footnote (e).* | | • |
| Lubricate body components. *See footnote (f).* | | • |
| Replace passenger compartment air filter. *See footnote (j).* | | • |



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## Additional Required Services

The following services should be performed at the first maintenance service (I or II) after the indicated miles (kilometers) shown for each item.

**Additional Required Services**

| Service and Miles (Kilometers) | 25,000 (40 000) | 50,000 (80 000) | 75,000 (120 000) | 100,000 (160 000) | 125,000 (200 000) | 150,000 (240 000) |
|---|---|---|---|---|---|---|
| Inspect fuel system for damage or leaks. | • | • | • | • | • | • |
| Inspect exhaust system for loose or damaged components. | • | • | • | • | • | • |
| Replace engine air cleaner filter. See *Engine Air Cleaner/Filter on page 365.* | | • | | • | | • |
| For vehicles used for trailer towing: Change transfer case fluid. | | • | | • | | • |
| Change automatic transmission fluid and filter (severe service). *See footnote (h).* | | • | | • | | • |
| Change automatic transmission fluid and filter (normal service). | | | | • | | |
| Replace spark plugs. *An Emission Control Service.* | | | | • | | |



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## Additional Required Services (cont'd)

| Service and Miles (Kilometers) | 25,000 (40 000) | 50,000 (80 000) | 75,000 (120 000) | 100,000 (160 000) | 125,000 (200 000) | 150,000 (240 000) |
|---|---|---|---|---|---|---|
| Engine cooling system service (or every five years, whichever occurs first). *An Emission Control Service. See footnote (i).* | | | | | | • |
| Inspect engine accessory drive belt. *An Emission Control Service. See footnote (l).* | | | | | | • |
| If using DOT-4 brake fluid, change brake fluid at a regular maintenance service every two years. *See footnote (m).* | | | | | | |

## Maintenance Footnotes

*# Lubricate the front suspension, steering linkage, transmission shift linkage, and parking brake cable guides. Control arm ball joints require lubrication but should not be lubricated unless their temperature is 10°F (-12°C) or higher, or they could be damaged.*

(a) *Visually inspect brake lines and hoses for proper hook-up, binding, leaks, cracks, chafing, etc. Inspect disc brake pads for wear and rotors for surface condition. Inspect other brake parts, including calipers, parking brake, etc.*

(b) *Visually inspect front and rear suspension and steering system for damaged, loose, or missing parts, signs of wear or lack of lubrication. Inspect power steering lines and hoses for proper hook-up, binding, leaks, cracks, chafing, etc.*



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(c) *Visually inspect hoses and have them replaced if they are cracked, swollen, or deteriorated. Inspect all pipes, fittings and clamps; replace with genuine GM parts as needed. To help ensure proper operation, a pressure test of the cooling system and pressure cap and cleaning the outside of the radiator and air conditioning condenser is recommended at least once a year.*

(d) *Visually inspect wiper blades for wear or cracking. Replace wiper blades that appear worn or damaged or that streak or miss areas of the windshield.*

(e) *Make sure the safety belt reminder light and all your belts, buckles, latch plates, retractors, and anchorages are working properly. Look for any other loose or damaged safety belt system parts. If you see anything that might keep a safety belt system from doing its job, have it repaired. Have any torn or frayed safety belts replaced. Also look for any opened or broken airbag coverings, and have them repaired or replaced. The airbag system does not need regular maintenance.*

(f) *Lubricate all key lock cylinders, hood latch assemblies, secondary latch, pivots, spring anchor, release pawl, hood hinges, body door hinges, rear compartment hinges, sunroof tracks, and any folding seat hardware. More frequent lubrication could be required when exposed to a corrosive environment. Applying silicone grease on weatherstrips with a clean cloth will make them last longer, seal better, and not stick or squeak. See Weatherstrips on page 447.*

(g) *A fluid loss in any vehicle system could indicate a problem. Have the system inspected and repaired and the fluid level checked. Add fluid if needed.*

(h) *Change automatic transmission fluid and filter if the vehicle is mainly driven under one or more of these conditions:*

- *In heavy city traffic where the outside temperature regularly reaches 90°F (32°C) or higher.*
- *In hilly or mountainous terrain.*
- *When doing frequent trailer towing.*
- *Uses such as found in taxi, police, or delivery service.*



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(i) *Drain, flush, and refill cooling system. This service can be complex; you should have your dealer perform this service. See Engine Coolant on page 368 for what to use. Inspect hoses. Clean radiator, condenser, pressure cap, and filler neck. Pressure test the cooling system and pressure cap.*

(j) *If you drive regularly under dusty conditions, the filter could require replacement more often.*

(k) *If you drive regularly under dusty conditions, inspect the filter at each engine oil change.*

(l) *Visually inspect belt for fraying, excessive cracks, or obvious damage. Replace belt if necessary.*

(m) *If using DOT-4 brake fluid only: Drain, flush, and refill brake hydraulic system at a regular maintenance service (I or II) every two years. This service can be complex; you should have your dealer perform this service. See Brakes on page 381.*

## Owner Checks and Services

These owner checks and services should be performed at the intervals specified to help ensure the safety, dependability, and emission control performance of your vehicle. Your GM Goodwrench® dealer can assist you with these checks and services.

Be sure any necessary repairs are completed at once. Whenever any fluids or lubricants are added to your vehicle, make sure they are the proper ones, as shown in *Recommended Fluids and Lubricants on page 480*.

## At Each Fuel Fill

*It is important to perform these underhood checks at each fuel fill.*

### Engine Oil Level Check

Check the engine oil level and add the proper oil if necessary. See *Engine Oil on page 360* for further details.



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***Notice:*** **It is important to check the engine oil regularly and keep it at the proper level. Failure to keep the engine oil at the proper level can cause damage to the engine not covered by your warranty.**

### Engine Coolant Level Check

Check the engine coolant level and add DEX-COOL® coolant mixture if necessary. See *Engine Coolant on page 368* for further details.

### Windshield Washer Fluid Level Check

Check the windshield washer fluid level in the windshield washer fluid reservoir and add the proper fluid if necessary.

## At Least Once a Month

### Tire Inflation Check

Visually inspect your vehicle's tires and make sure they are inflated to the correct pressures. Do not forget to check the spare tire. See *Inflation - Tire Pressure on page 407*. Check to make sure the spare tire is stored securely. See *Changing a Flat Tire on page 424*.

## At Least Once a Year

### Starter Switch Check

**⚠ CAUTION:**

**When you are doing this inspection, the vehicle could move suddenly. If the vehicle moves, you or others could be injured.**

1. Before you start, be sure you have enough room around the vehicle.
2. Firmly apply both the parking brake and the regular brake. See *Parking Brake on page 127*.

   Do not use the accelerator pedal, and be ready to turn off the engine immediately if it starts.
3. Try to start the engine in each gear. The vehicle should start only in PARK (P) or NEUTRAL (N). If the vehicle starts in any other position, contact your GM Goodwrench® dealer for service.



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### Automatic Transmission Shift Lock Control System Check

**⚠ CAUTION:**

**When you are doing this inspection, the vehicle could move suddenly. If the vehicle moves, you or others could be injured.**

1. Before you start, be sure you have enough room around the vehicle. It should be parked on a level surface.
2. Firmly apply the parking brake. See *Parking Brake on page 127*.

   Be ready to apply the regular brake immediately if the vehicle begins to move.
3. With the engine off, turn the ignition to ON, but do not start the engine. Without applying the regular brake, try to move the shift lever out of PARK (P) with normal effort. If the shift lever moves out of PARK (P), contact your GM Goodwrench® dealer for service.

### Ignition Transmission Lock Check

While parked, and with the parking brake set, try to turn the ignition to OFF in each shift lever position.

- The ignition should turn to OFF only when the shift lever is in PARK (P).
- The ignition key should come out only in OFF.

Contact your GM Goodwrench® dealer if service is required.



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### Parking Brake and Automatic Transmission Park (P) Mechanism Check

**⚠ CAUTION:**

**When you are doing this check, your vehicle could begin to move. You or others could be injured and property could be damaged. Make sure there is room in front of your vehicle in case it begins to roll. Be ready to apply the regular brake at once should the vehicle begin to move.**

Park on a fairly steep hill, with the vehicle facing downhill. Keeping your foot on the regular brake, set the parking brake.

- To check the parking brake's holding ability: With the engine running and transmission in NEUTRAL (N), slowly remove foot pressure from the regular brake pedal. Do this until the vehicle is held by the parking brake only.
- To check the PARK (P) mechanism's holding ability: With the engine running, shift to PARK (P). Then release the parking brake followed by the regular brake.

Contact your GM Goodwrench® dealer if service is required.

### Underbody Flushing Service

At least every spring, use plain water to flush any corrosive materials from the underbody. Take care to clean thoroughly any areas where mud and other debris can collect.



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## Recommended Fluids and Lubricants

Fluids and lubricants identified below by name, part number, or specification can be obtained from your dealer.

| Usage | Fluid/Lubricant |
|---|---|
| Engine Oil | The engine requires a special engine oil meeting GM Standard GM4718M. Oils meeting this standard can be identified as synthetic, and should also be identified with the American Petroleum Institute (API) Certified for Gasoline Engines starburst symbol. However, not all synthetic API oils with the starburst symbol will meet this GM standard. You should look for and use only an oil that meets GM Standard GM4718M. GM Goodwrench® oil meets all the requirements for your vehicle. For the proper viscosity, see *Engine Oil on page 360*. |
| Engine Coolant | 50/50 mixture of clean, drinkable water and use only DEX-COOL® Coolant. See *Engine Coolant on page 368*. |
| Hydraulic Brake System | Delco® Supreme 11 Brake Fluid or equivalent DOT-3 brake fluid. |
| Windshield Washer | GM Optikleen® Washer Solvent. |
| Power Steering System | GM Power Steering Fluid (GM Part No. U.S. 89021184, in Canada 89021186). |
| Automatic Transmission | DEXRON®-VI Automatic Transmission Fluid. |
| Key Lock Cylinders | Multi-Purpose Lubricant, Superlube (GM Part No. U.S. 12346241, in Canada 10953474). |
| Chassis Lubrication | Chassis Lubricant (GM Part No. U.S. 12377985, in Canada 88901242) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB. |



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| Usage | Fluid/Lubricant |
|---|---|
| Front and Rear Axle | SAE 75W-90 Synthetic Axle Lubricant (GM Part No. U.S. 12378261, in Canada 10953455) meeting GM Specification 9986115. |
| Transfer Case | Manual Transmission Fluid (GM Part No. U.S. 88861800, in Canada 88861801). |
| Hood Hinges | Multi-Purpose Lubricant, Superlube (GM Part No. U.S. 12346241, in Canada 10953474). |
| Body Door Hinge Pins, Tailgate Hinge and Linkage, Folding Seats, Sunroof Tracks, and Fuel Door Hinge | Multi-Purpose Lubricant, Superlube (GM Part No. U.S. 12346241, in Canada 10953474). |

| Usage | Fluid/Lubricant |
|---|---|
| Outer Tailgate Handle Pivot Points | Multi-Purpose Lubricant, Superlube (GM Part No. U.S. 12346241, in Canada 10953474). |
| Weatherstrip Conditioning | Weatherstrip Lubricant (GM Part No. U.S. 3634770, in Canada 10953518) or Dielectric Silicone Grease (GM Part No. U.S. 12345579, in Canada 992887). |
| Weatherstrip Squeaks | Synthetic Grease with Teflon, Superlube (GM Part No. U.S. 12371287, in Canada 10953437). |



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## Normal Maintenance Replacement Parts

Replacement parts identified below by name, part number, or specification can be obtained from your dealer.

| Part | GM Part Numbers | ACDelco® Part Numbers |
|---|---|---|
| Engine Air Cleaner/Filter | 25735595 | A2944C |
| Engine Oil Filter | | |
| 3.6L V6 | 25177917 | PF2129 |
| 4.6L V8 | 89017342 | PF61 |
| Passenger Compartment Air Filter | | |
| Particle and Odor Filter | 88957450 | CF130C |
| Particle Filter | 25740404 | CF133 |
| Spark Plugs | | |
| 3.6L V6 | 12597464 | 41-990 |
| 4.6L V8 | 12571535 | 41-987 |
| Windshield Wiper Blade Assembly | | |
| Driver's Side – 22 inches (56.5 cm) | 12367281 | — |
| Passenger's Side – 21 inches (53.3 cm) | 88892785 | — |
| Rear Wiper Blade- 13 inches (33.0 cm) | 15209055 | — |



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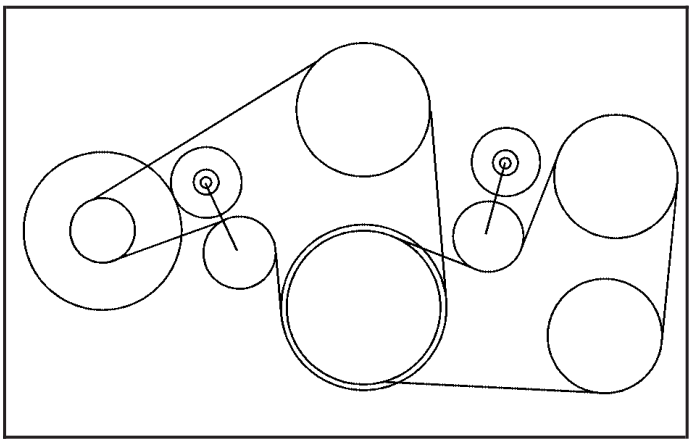
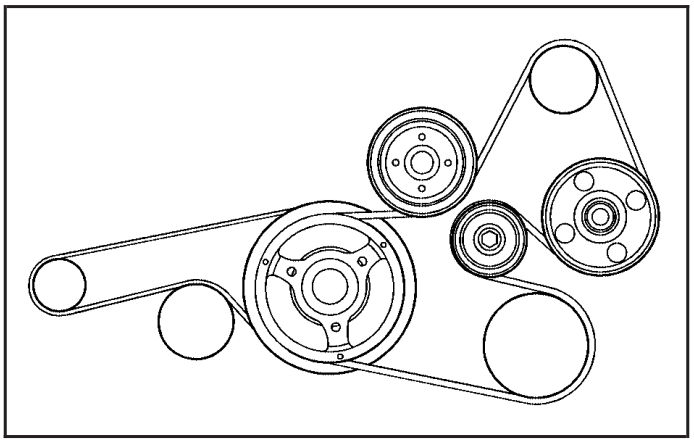
## Engine Drive Belt Routing



3.6L V6 Engine



4.6L V8 Engine



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## Maintenance Record

After the scheduled services are performed, record the date, odometer reading, who performed the service, and the type of services performed in the boxes provided. See *Maintenance Requirements on page 468*. Any additional information from *Owner Checks and Services on page 476* can be added on the following record pages. You should retain all maintenance receipts.

**Maintenance Record**

| Date | Odometer Reading | Serviced By | Maintenance I or Maintenance II | Services Performed |
|---|---|---|---|---|
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## Maintenance Record (cont'd)

| Date | Odometer Reading | Serviced By | Maintenance I or Maintenance II | Services Performed |
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## Maintenance Record (cont'd)

| Date | Odometer Reading | Serviced By | Maintenance I or Maintenance II | Services Performed |
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# Section 7 Customer Assistance Information

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# Customer Assistance and Information

## Customer Satisfaction Procedure

Your satisfaction and goodwill are important to your dealer and to Cadillac. Normally, any concerns with the sales transaction or the operation of your vehicle will be resolved by your dealer's sales or service departments. Sometimes, however, despite the best intentions of all concerned, misunderstandings can occur. If your concern has not been resolved to your satisfaction, the following steps should be taken:

**STEP ONE:** Discuss your concern with a member of dealership management. Normally, concerns can be quickly resolved at that level. If the matter has already been reviewed with the sales, service or parts manager, contact the owner of the dealership or the general manager.

**STEP TWO:** If after contacting a member of dealership management, it appears your concern cannot be resolved by the dealership without further help, contact the Cadillac Customer Assistance Center, 24 hours a day, by calling 1-800-458-8006. In Canada, contact the Canadian Cadillac Customer Communication Centre by calling 1-888-446-2000.

We encourage you to call the toll-free number in order to give your inquiry prompt attention. Please have the following information available to give the Customer Assistance Representative:

- Vehicle Identification Number (VIN). This is available from the vehicle registration or title, or the plate at the top left of the instrument panel and visible through the windshield.
- Dealership name and location.
- Vehicle delivery date and present mileage.

When contacting Cadillac, please remember that your concern will likely be resolved at a dealer's facility. That is why we suggest you follow Step One first if you have a concern.



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**STEP THREE:** Both General Motors and your dealer are committed to making sure you are completely satisfied with your new vehicle. However, if you continue to remain unsatisfied after following the procedure outlined in Steps One and Two, you should file with the BBB Auto Line Program to enforce any additional rights you may have. Canadian owners refer to your Warranty and Owner Assistance Information booklet for information on the Canadian Motor Vehicle Arbitration Plan (CAMVAP).

The BBB Auto Line Program is an out of court program administered by the Council of Better Business Bureaus to settle automotive disputes regarding vehicle repairs or the interpretation of the New Vehicle Limited Warranty. Although you may be required to resort to this informal dispute resolution program prior to filing a court action, use of the program is free of charge and your case will generally be heard within 40 days. If you do not agree with the decision given in your case, you may reject it and proceed with any other venue for relief available to you.

You may contact the BBB Auto Line Program using the toll-free telephone number or write them at the following address:

BBB Auto Line Program
Council of Better Business Bureaus, Inc.
4200 Wilson Boulevard
Suite 800
Arlington, VA 22203-1838

Telephone: 1-800-955-5100

This program is available in all 50 states and the District of Columbia. Eligibility is limited by vehicle age, mileage and other factors. General Motors reserves the right to change eligibility limitations and/or discontinue its participation in this program.



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# Online Owner Center

## Online Owner Center (United States only)

The Owner Center is a resource for your GM ownership needs. Specific vehicle information can be found in one place.

**The Online Owner Center allows you to:**

- Get e-mail service reminders.
- Access information about your specific vehicle, including tips and videos and an electronic version of this owner manual.
- Keep track of your vehicle's service history and maintenance schedule.
- Find GM dealers for service nationwide.
- Receive special promotions and privileges only available to members.

Refer to www.MyGMLink.com on the web for updated information and to register your vehicle.

## My GM Canada (Canada only)

My GM Canada is a password-protected section of gmcanada.com where you can save information on GM vehicles, get personalized offers, and use handy tools and forms with greater ease.

Here are a few of the valuable tools and services you will have access to:

- My Showroom: Find and save information on vehicles and current offers in your area.
- My Dealers/Retailers: Save details such as address and phone number for each of your preferred GM Dealers or Retailers.
- My Driveway: Receive service reminders and helpful advice on owning and maintaining your vehicle.
- My Preferences: Manage your profile, subscribe to E-News and use tools and forms with greater ease.

To sign up to My GM Canada, visit the My GM Canada section within www.gmcanada.com.



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## Customer Assistance for Text Telephone (TTY) Users

To assist customers who are deaf, hard of hearing, or speech-impaired and who use Text Telephones (TTYs), Cadillac has TTY equipment available at its Customer Assistance Center. Any TTY user can communicate with Cadillac by dialing: 1-800-833-CMCC (2622). (TTY users in Canada can dial 1-800-263-3830.)

## Customer Assistance Offices

Cadillac encourages customers to call the toll-free number for assistance. However, if a customer wishes to write or e-mail Cadillac, refer to the addresses below.

### United States — Customer Assistance

Cadillac Customer Assistance Center
Cadillac Motor Car Division
P.O. Box 33169
Detroit, MI 48232-5169

www.Cadillac.com
1-800-458-8006
1-800-833-2622 (For Text Telephone devices (TTYs))
Roadside Assistance: 1-800-882-1112
Fax Number: 313-381-0022

From Puerto Rico:
1-800-496-9992 (English)
1-800-496-9993 (Spanish)
Fax Number: 313-381-0022

From U.S. Virgin Islands:
1-800-496-9994
Fax Number: 313-381-0022

### Canada — Customer Assistance

General Motors of Canada Limited
Canadian Cadillac Customer Communication Centre, CA1-163-005
1908 Colonel Sam Drive
Oshawa, Ontario L1H 8P7

1-888-446-2000
1-800-263-3830 (For Text Telephone devices (TTYs))
Roadside Assistance: 1-800-882-1112



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## Overseas — Customer Assistance

Please contact the local General Motors Business Unit.

## Mexico, Central America and Caribbean Islands/Countries (Except Puerto Rico and U.S. Virgin Islands) — Customer Assistance

General Motors de Mexico, S. de R.L. de C.V.
Customer Assistance Center
Paseo de la Reforma # 2740
Col. Lomas de Bezares
C.P. 11910, Mexico, D.F.
01-800-508-0000
Long Distance: 011-52-53 29 0 800

## GM Mobility Reimbursement Program

GM MOBILITY℠

This program, available to qualified applicants, can reimburse you up to $1,000 of the cost of eligible aftermarket adaptive equipment required for your vehicle, such as hand controls or a wheelchair/scooter lift.

The offer is available for a very limited period of time from the date of vehicle purchase/lease. For more details, or to determine your vehicle's eligibility, visit gmmobility.com or call the GM Mobility Assistance Center at 1-800-323-9935. Text telephone (TTY) users, call 1-800-833-9935.

GM of Canada also has a Mobility Program. Call 1-800-GM-DRIVE (463-7483) for details. TTY users call 1-800-263-3830.



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## Roadside Service

In the United States or Canada, call **1-800-882-1112**. Service is available 24 hours a day, 365 days a year.

### Who Is Covered?

Roadside Assistance coverage is for the vehicle operator, regardless of ownership. A person driving this vehicle without the consent of the owner is not eligible for coverage.

The following services are provided in the United States during the Bumper-to-Bumper warranty period and in Canada, during the Base Warranty coverage period of the New Vehicle Limited Warranty, up to a maximum coverage of $100. These services are provided at a nominal charge if the Cadillac is no longer covered by the warranties listed previously. Roadside Service is available only in the United States and Canada.

### Cadillac Owner Privileges™

Roadside Service provides several Cadillac Owner Privileges™ at "no charge," throughout your *Cadillac Warranty Period — 48 months/ 50,000 miles (80 000 km).*

Emergency Road Service is performed on site for the following situations:

- **Towing Service:** Emergency towing from a public roadway or highway to the nearest dealership for warranty service or in the event of a vehicle-disabling accident. Winch-out assistance when the vehicle is mired in sand, mud, or snow.
- **Battery Jump Starting:** No-start occurrences which require a battery jump start will be covered at no charge.
- **Lock Out Assistance:** To ensure security, the driver must present the vehicle registration and personal ID before lock-out service is provided. Lock-out service will be covered at no charge if you are unable to gain entry into your vehicle. If your vehicle will not start, Roadside Service will arrange to have your vehicle towed to the nearest authorized dealership. In the United States, replacement keys made at the customer's expense will be delivered within 10 miles.



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- **Fuel Delivery:** Delivery of enough fuel for the customer to get to the nearest service station (approximately $5 in the United States and 10 litres in Canada).
- **Flat Tire Change (Covers change only):** Installation of your spare tire, in good condition, will be covered at no charge. The customer is responsible for the repair or replacement of the tire if not covered by a warrantable failure.
- **Trip Interruption:** If your trip is interrupted due to a warranty failure, incidental expenses may be reimbursed during the 48 months/50,000 miles (80 000 km) warranty period. Items covered are hotel, meals, and rental car.

## Additional Services for Canadian Customers

- **Trip Routing Service:** Upon request, Cadillac Roadside Service will send you detailed, computer-personalized maps, highlighting your choice of either the most direct route or the most scenic route to your destination, anywhere in North America, along with any helpful travel information we may have pertaining to your trip. To request this service, please call us toll-free at 1-800-268-6800. We will make every attempt to send your personalized trip routing as quickly as possible, but it is best to allow three weeks before your planned departure date. Trip routing requests will be limited to six per calendar year.
- **Alternative Service:** There may be times when Roadside Service cannot provide timely assistance. Your advisor may authorize you to secure local emergency road service, and you will be reimbursed up to $100 upon submission of the original receipt to Cadillac Roadside Service®.



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## Cadillac Technician Roadside Service (U.S. only)

Cadillac's exceptional Roadside Service is more than an auto club or towing service. It provides every Cadillac owner in the United States with the advantage of contacting a Cadillac advisor and, where available, a Cadillac trained dealer technician who can provide on-site service.

A dealer technician will travel to your location within a 30 mile (50 km) radius of a participating Cadillac dealership. If beyond this radius, we will arrange to have your car towed to the nearest Cadillac dealership. Each technician travels with a specially equipped service vehicle complete with the necessary Cadillac parts and tools required to handle most roadside repairs.

## Calling for Assistance

For prompt and efficient assistance when calling, please provide the following to the Roadside Service Representative:

- A description of the problem
- Name, home address, home telephone number
- Location of your Cadillac and number you are calling from
- The model year, Vehicle Identification Number (VIN), odometer reading, and date of delivery

While we hope you never have the occasion to use our service, it is added security while traveling for you and your family. Remember, we are only a phone call away. In the United States or Canada, customers call Roadside Service: **1-800-882-1112**. Any customer who has access to a (TTY) or a conventional teletypewriter can communicate with Cadillac by dialing from the United States or Canada **1-888-889-2438** — daily, 24 hours.



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Cadillac and General Motors of Canada Limited reserve the right to limit services or reimbursement to an owner or driver when, in their sole discretion, the claims become excessive in frequency or type of occurrence.

Roadside Service is not part of or included in the coverage provided by the New Vehicle Limited Warranty. Cadillac General Motors of Canada Limited reserve the right to make any changes or discontinue the Roadside Service program at any time without notification.

### Towing and Road Service Exclusions

Specifically excluded from Roadside Service coverage are towing or services for vehicles operated on a non-public roadway or highway, fines, impound towing caused by a violation of local, Municipal, State, Provincial or Federal law, and mounting, dismounting or changing of snow tires, chains, or other traction devices.

## Courtesy Transportation

To enhance your ownership experience, we and our participating dealers are proud to offer Courtesy Transportation, a customer support program for new vehicles.

The Courtesy Transportation program is offered to customers in conjunction with the Bumper-to-Bumper coverage provided by the New Vehicle Limited Warranty. Several transportation options are available when warranty repairs are required. This will reduce your inconvenience during warranty repairs.

### Scheduling Service Appointments

When your vehicle requires warranty service, you should contact your dealer and request an appointment. By scheduling a service appointment and advising your service consultant of your transportation needs, your dealer can help minimize your inconvenience.

If your vehicle cannot be scheduled into the service department immediately, keep driving it until it can be scheduled for service, unless, of course, the problem is safety-related. If it is, please call your dealership, let them know this, and ask for instructions.

If the dealer requests that you simply drop the vehicle off for service, you are urged to do so as early in the work day as possible to allow for the same day repair.



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## Transportation Options

Warranty service can generally be completed while you wait. However, if you are unable to wait, GM helps to minimize your inconvenience by providing several transportation options. Depending on the circumstances, your dealer can offer you one of the following:

### Shuttle Service

Participating dealers can provide you with shuttle service to get you to your destination with minimal interruption of your daily schedule. This includes one-way or round trip shuttle service to a destination up to 10 miles (16 km) from the dealership.

### Public Transportation or Fuel Reimbursement

If your vehicle requires warranty repairs, reimbursement of public transportation expenses may be available, for up to a maximum of five days. In addition, should you arrange transportation through a friend or relative, reimbursement for reasonable fuel expenses may be available, up to a five-day maximum. Claim amounts should reflect actual costs and be supported by original receipts.

### Courtesy Rental Vehicle

Your dealer may arrange to provide you with a courtesy rental vehicle or reimburse you for a rental vehicle that you obtain if your vehicle is kept for a warranty repair. Reimbursement will be limited to a maximum amount per day and must be supported by receipts. This requires that you sign and complete a rental agreement and meet state, local and rental vehicle provider requirements. Requirements vary and may include minimum age requirements, insurance coverage, credit card, etc. You are responsible for fuel usage charges and may also be responsible for taxes, levies, usage fees, excessive mileage or rental usage beyond the completion of the repair.

Generally it is not possible to provide a like-vehicle as a courtesy rental.

## Additional Program Information

Courtesy Transportation is available during the Bumper-to-Bumper warranty coverage period, but it is not part of the New Vehicle Limited Warranty. A separate booklet entitled *Warranty and Owner Assistance Information* furnished with each new vehicle provides detailed warranty coverage information.



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Courtesy Transportation is available only at participating dealers and all program options, such as shuttle service, may not be available at every dealer. Please contact your dealer for specific information about availability. All Courtesy Transportation arrangements will be administered by appropriate dealer personnel.

**Canadian Vehicles:** For warranty repairs during the Complete Vehicle Coverage period of the General Motors of Canada New Vehicle Limited Warranty, alternative transportation may be available under the Courtesy Transportation Program. Please consult your dealer for details.

*General Motors reserves the right to unilaterally modify, change or discontinue Courtesy Transportation at any time and to resolve all questions of claim eligibility pursuant to the terms and conditions described herein at its sole discretion.*

## Vehicle Data Collection and Event Data Recorders

Your vehicle, like other modern motor vehicles, has a number of sophisticated computer systems that monitor and control several aspects of the vehicle's performance. Your vehicle uses on-board vehicle computers to monitor emission control components to optimize fuel economy, to monitor conditions for airbag deployment and, if so equipped, to provide anti-lock braking and to help the driver control the vehicle in difficult driving situations. Some information may be stored during regular operations to facilitate repair of detected malfunctions; other information is stored only in a crash event by computer systems, such as those commonly called Event Data Recorders (EDR).

In a crash event, computer systems, such as the airbag Sensing and Diagnostic Module (SDM) in your vehicle may record information about the condition of the vehicle and how it was operated, such as data related to engine speed, brake application, throttle position, vehicle speed, safety belt usage, airbag readiness, airbag performance, and the severity of a collision.



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If your vehicle is equipped with StabiliTrak®, steering performance, including yaw rate, steering wheel angle, and lateral acceleration, is also recorded. This information has been used to improve vehicle crash performance and may be used to improve crash performance of future vehicles and driving safety. Unlike the data recorders on many airplanes, these on-board systems do not record sounds, such as conversation of vehicle occupants.

To read this information, special equipment is needed and access to the vehicle or the device that stores the data is required. GM will not access information about a crash event or share it with others other than:

- with the consent of the vehicle owner or, if the vehicle is leased, with the consent of the lessee,
- in response to an official request of police or similar government office,
- as part of GM's defense of litigation through the discovery process, or
- as required by law.

In addition, once GM collects or receives data, GM may:

- use the data for GM research needs,
- make it available for research where appropriate confidentiality is to be maintained and need is shown, or
- share summary data which is not tied to a specific vehicle with non-GM organizations for research purposes.

Others, such as law enforcement, may have access to the special equipment that can read the information if they have access to the vehicle or the device that stores the data.

If your vehicle has OnStar®, please check the OnStar® subscription service agreement or manual for information on its operations and data collection.



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## Collision Damage Repair

If your vehicle is involved in a collision and it is damaged, have the damage repaired by a qualified technician using the proper equipment and quality replacement parts. Poorly performed collision repairs will diminish your vehicle's resale value, and safety performance can be compromised in subsequent collisions.

### Collision Parts

Genuine GM Collision parts are new parts made with the same materials and construction methods as the parts with which your vehicle was originally built. Genuine GM Collision parts are your best choice to assure that your vehicle's designed appearance, durability and safety are preserved. The use of Genuine GM parts can help maintain your GM New Vehicle Warranty.

Recycled original equipment parts may also be used for repair. These parts are typically removed from vehicles that were total losses in prior accidents. In most cases, the parts being recycled are from undamaged sections of the vehicle.

A recycled original equipment GM part, may be an acceptable choice to maintain your vehicle's originally designed appearance and safety performance, however, the history of these parts is not known. Such parts are not covered by your GM New Vehicle Limited Warranty, and any related failures are not covered by that warranty.

Aftermarket collision parts are also available. These are made by companies other than GM and may not have been tested for your vehicle. As a result, these parts may fit poorly, exhibit premature durability/corrosion problems, and may not perform properly in subsequent collisions. Aftermarket parts are not covered by your GM New Vehicle Limited Warranty, and any vehicle failure related to such parts are not covered by that warranty.

### Repair Facility

GM also recommends that you choose a collision repair facility that meets your needs before you ever need collision repairs. Your GM dealer may have a collision repair center with GM-trained technicians and state of the art equipment, or be able to recommend a collision repair center that has GM-trained technicians and comparable equipment.



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## Insuring Your Vehicle

Protect your investment in your GM vehicle with comprehensive and collision insurance coverage. There are significant differences in the quality of coverage afforded by various insurance policy terms. Many insurance policies provide reduced protection to your GM vehicle by limiting compensation for damage repairs by using aftermarket collision parts. Some insurance companies will not specify aftermarket collision parts. When purchasing insurance, we recommend that you assure your vehicle will be repaired with GM original equipment collision parts. If such insurance coverage is not available from your current insurance carrier, consider switching to another insurance carrier.

If your vehicle is leased, the leasing company may require you to have insurance that assures repairs with Genuine GM Original Equipment Manufacturer (OEM) parts or Genuine Manufacturer replacement parts. Read your lease carefully, as you may be charged at the end of your lease for poor quality repairs.

## If an Accident Occurs

Here is what to do if you are involved in an accident.

- Try to relax and then check to make sure you are all right. If you are uninjured, make sure that no one else in your vehicle, or the other vehicle, is injured.
- If there has been an injury, call 911 for help. Do not leave the scene of an accident until all matters have been taken care of. Move your vehicle only if its position puts you in danger or you are instructed to move it by a police officer.
- Give only the necessary and requested information to police and other parties involved in the accident. Do not discuss your personal condition, mental frame of mind, or anything unrelated to the accident. This will help guard against post-accident legal action.
- If you need roadside assistance, call GM Roadside Assistance. See *Roadside Service on page 493* for more information.



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- If your vehicle cannot be driven, know where the towing service will be taking it. Get a card from the tow truck operator or write down the driver's name, the service's name, and the phone number.
- Remove any valuables from your vehicle before it is towed away. Make sure this includes your insurance information and registration if you keep these items in your vehicle.
- Gather the important information you will need from the other driver. Things like name, address, phone number, driver's license number, vehicle license plate, vehicle make, model and model year, Vehicle Identification Number (VIN), insurance company and policy number, and a general description of the damage to the other vehicle.
- If possible, call your insurance company from the scene of the accident. They will walk you through the information they will need. If they ask for a police report, phone or go to the police department headquarters the next day and you can get a copy of the report for a nominal fee. In some states/provinces with "no fault" insurance laws, a report may not be necessary. This is especially true if there are no injuries and both vehicles are driveable.
- Choose a reputable collision repair facility for your vehicle. Whether you select a GM dealer or a private collision repair facility to fix the damage, make sure you are comfortable with them. Remember, you will have to feel comfortable with their work for a long time.
- Once you have an estimate, read it carefully and make sure you understand what work will be performed on your vehicle. If you have a question, ask for an explanation. Reputable shops welcome this opportunity.



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## Managing the Vehicle Damage Repair Process

In the event that your vehicle requires damage repairs, GM recommends that you take an active role in its repair. If you have a pre-determined repair facility of choice, take your vehicle there, or have it towed there. Specify to the facility that any required replacement collision parts be original equipment parts, either new Genuine GM parts or recycled original GM parts. Remember, recycled parts will not be covered by your GM vehicle warranty.

Insurance pays the bill for the repair, but you must live with the repair. Depending on your policy limits, your insurance company may initially value the repair using aftermarket parts.

Discuss this with your repair professional, and insist on Genuine GM parts. Remember if your vehicle is leased you may be obligated to have the vehicle repaired with Genuine GM parts, even if your insurance coverage does not pay the full cost.

If another party's insurance company is paying for the repairs, you are not obligated to accept a repair valuation based on that insurance company's collision policy repair limits, as you have no contractual limits with that company. In such cases, you can have control of the repair and parts choices as long as cost stays within reasonable limits.



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# Reporting Safety Defects

## Reporting Safety Defects to the United States Government

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA), in addition to notifying General Motors.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or General Motors.

To contact NHTSA, you may call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); go to http://www.safercar.gov; or write to:

Administrator, NHTSA
400 Seventh Street, SW.
Washington, D.C. 20590

You can also obtain other information about motor vehicle safety from http://www.safercar.gov.

## Reporting Safety Defects to the Canadian Government

If you live in Canada, and you believe that your vehicle has a safety defect, you should immediately notify Transport Canada, in addition to notifying General Motors of Canada Limited. You may call them at 1-800-333-0510 or write to:

Transport Canada
Road Safety Branch
2780 Sheffield Road
Ottawa, Ontario K1B 3V9



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## Reporting Safety Defects to General Motors

In addition to notifying NHTSA (or Transport Canada) in a situation like this, we certainly hope you will notify us. Please call us at 1-800-458-8006, or write:

Cadillac Customer Assistance Center
Cadillac Motor Car Division
P.O. Box 33169
Detroit, MI 48232-5169

In Canada, please call us at 1-888-446-2000. Or, write:

Canadian Cadillac Customer Communication Centre, CA1-163-005
General Motors of Canada Limited
1908 Colonel Sam Drive
Oshawa, Ontario L1H 8P7

## Service Publications Ordering Information

### Service Manuals

Service Manuals have the diagnosis and repair information on engines, transmission, axle suspension, brakes, electrical, steering, body, etc.

### Transmission, Transaxle, Transfer Case Unit Repair Manual

This manual provides information on unit repair service procedures, adjustments, and specifications for GM transmissions, transaxles, and transfer cases.

### Service Bulletins

Service Bulletins give technical service information needed to knowledgeably service GM cars and trucks. Each bulletin contains instructions to assist in the diagnosis and service of your vehicle.

In Canada, information pertaining to Product Service Bulletins can be obtained by contacting your General Motors dealer or by calling 1-800-GM-DRIVE (1-800-463-7483).



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## Owner Information

Owner publications are written specifically for owners and intended to provide basic operational information about the vehicle. The owner's manual will include the Maintenance Schedule for all models.

In-Portfolio: Includes a Portfolio, Owner Manual, and Warranty Booklet.

RETAIL SELL PRICE: $35.00

Without Portfolio: Owner Manual only.

RETAIL SELL PRICE: $25.00

## Current and Past Model Order Forms

Technical Service Bulletins and Manuals are available for current and past model GM vehicles. To request an order form, please specify year and model name of the vehicle.

**ORDER TOLL FREE: 1-800-551-4123**
**Monday-Friday 8:00 AM - 6:00 PM**
**Eastern Time**

For Credit Card Orders Only
(VISA-MasterCard-Discover), visit Helm, Inc. at:
www.helminc.com

Or you can write to:

Helm, Incorporated
P.O. Box 07130
Detroit, MI 48207

Prices are subject to change without notice and without incurring obligation. Allow ample time for delivery.

Note to Canadian Customers: All listed prices are quoted in U.S. funds. Canadian residents are to make checks payable in U.S. funds.



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